

An Introduction to HTML and CSS

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Teacher's Introduction

This resource is designed to enable students to understand the basic structure of web pages and websites and be able to construct them using HTML for the basic structure and CSS rules to control the look of each web page.

Each of the topics introduces a new skill in using HTML or CSS in addition to building on and developing skills learnt in earlier topics through a series of exercises to practise those skills. Review questions have also been provided at the end of each topic, which may be useful for plenary or starter activities.

Checklists have been provided at the end of each topic so that students can record their progress from beginner to expert; these will also be useful for teachers to check the progress of individual students in their groups.

All solutions are provided for all quick questions, exercises and review questions, together with copies of the examples used in each topic so that these can be viewed and discussed in a whole-class situation.

Before you start

Download the support files for this resource via <http://zzed.uk/8733-files> and extract them to a suitable location. This includes the files students need to complete the exercises, as well as example solutions for every exercise.

Software

All the examples and solutions have been created using Notepad++; a free, open-source text editor, but students can use this resource with any suitable alternative. Using Notepad++ has several benefits over the standard Notepad application (syntax highlighting being the most obvious one).

S Wright, April 2019

Free Updates!

Register your email address to receive any future free updates* made to this resource or other ICT resources your school has purchased, and details of any promotions for your subject.

* resulting from minor specification changes, suggestions from teachers and peer reviews, or occasional errors reported by customers

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TOPIC 1: BASIC STRUCTURE OF A WEB

Your first program

Quick Question

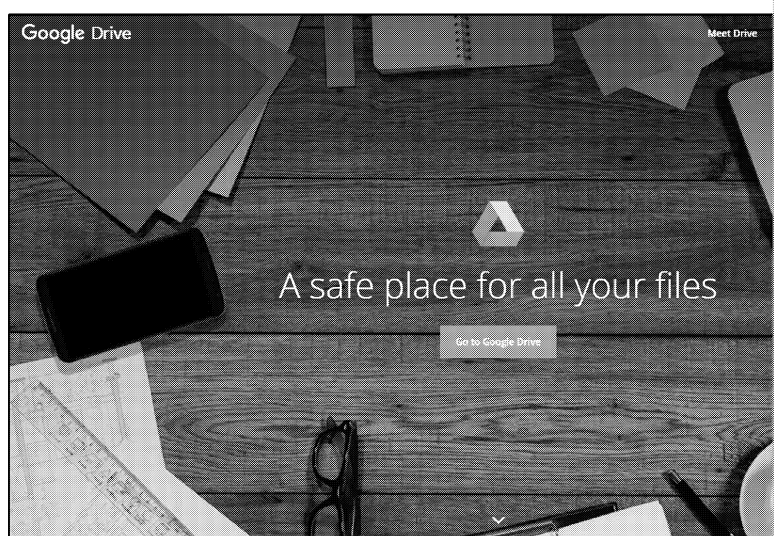
Web pages are viewed using software called a 'web browser'. What information does a web browser need to display any web page?

Exercise 1:1 Find the tags

Open your web browser and visit the website for Google Drive:

<https://www.google.com/drive/>

It may look similar to this:



Note: The content may be different when you view the page.

Put your cursor in the middle of the page and right-click. This will open a context menu with an option of 'View source' or 'View page source'.

You should now see all the code which the web browser reads to display the page.

1. Look at the sample from this website on the next page; highlight or circle the tags and write the line numbers in the table below.

Tag	Line Number
a. <head>	
b. </script>	
c. <html...>	
d. <body...>	
e. <!--... -->	
f. </title>	
g. <meta ... name="description">	
h. <link...>	

2. Look at the web page code again. What can you notice about options? How are these different from option (g)?

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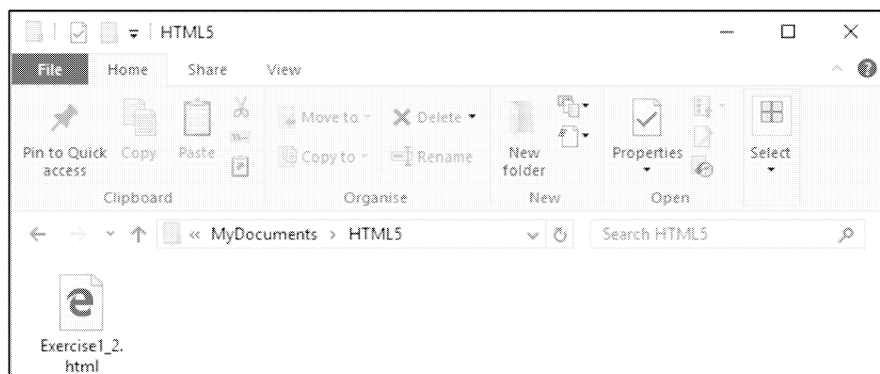
```

1 <!DOCTYPE html>
2 <html lang="en_US">
3   <head>
4
5   <script>(function(H){H.className=H.className.replace(/\bgoogle\b/, 'google-js'))(document.documentElement)</script>
6   <meta content="IE=edge" http-equiv="X-UA-Compatible">
7   <meta charset="utf-8">
8   <meta content="width=device-width,initial-scale=1.0,minimum-scale=1.0,maximum-scale=1.0,user-scalable=no" name="viewport">
9
10  <meta property="og:url" content="www.google.com/drive/">
11  <meta name="twitter:url" content="www.google.com/drive/">
12  <meta name="twitter:title" content="Google Drive: Free Cloud Storage for Personal Use">
13  <meta name="twitter:image" content="https://www.google.com/drive/static/images/drive/logo-drive.png">
14  <meta name="twitter:description" content="Safely store and share your photos, videos, files and more in the cloud. Your first 15 GB of storage are free.">
15  <meta name="twitter:creator" content="google">
16
17  <!-- Open Graph -->
18  <meta content="Google Drive: Free Cloud Storage for Personal Use" property="og:title">
19  <meta content="https://www.google.com/drive/static/images/drive/logo-drive.png" property="og:image">
20  <meta content="Safely store and share your photos, videos, files and more in the cloud. Your first 15 GB of storage are free." property="og:description">
21  <meta property="og:type" content="website">
22
23  <!-- Doc Meta -->
24  <title>Google Drive: Free Cloud Storage for Personal Use</title>
25  <meta content="Safely store and share your photos, videos, files and more in the cloud. Your first 15 GB of storage are free.">
26
27  <link rel="prefetch" href="//www.google.com/images/branding/googlelogo/2x/googlelogo_color_120x44dp.png">
28  <link rel="stylesheet" href="//www.gstatic.com/external_hosted/normalize/v8_0_x/normalize.min.css">
29  <link rel="stylesheet" href="//www.google.com/css/maia/experimental.css">
30  <link rel="stylesheet" href="//www.google.com/css/gweb/lightbox.css">
31
32  <script src="//www.google.com/js/google.js"></script>
33
34  <script>
35    var _gaq = _gaq || [];
36    _gaq.push(['_cookiePathCopy', '/a/']);
37    _gaq.push(['_cookiePathCopy', '/apps/']);
38    _gaq.push(['_cookiePathCopy', '/work/']);
39    _gaq.push(['_cookiePathCopy', '/work/apps/business/']);
40    _gaq.push(['_cookiePathCopy', '/intl/']);
41    _gaq.push(['_cookiePathCopy', '/intx/']);
42    _gaq.push(['_cookiePathCopy', '/work/']);
43    new gweb.analytics.AutoTrack({profile: "UA-28613865-1"});
44  </script>
45
46  <link href="//fonts.googleapis.com/css?family=Open+Sans:400,300,600&subset=latin,cyrillic-ext,greek-ext,greek,vietnamese" rel="stylesheet">
47  <link href="//fonts.googleapis.com/css?family=Product+Sans" rel="stylesheet">
48
49  <!-- External Scripts -->
50  <script src="//www.gstatic.com/external_hosted/modernizr/modernizr.js"></script>
51
52  <!-- Favicon -->
53  <link href="//drive/static/images/drive/favicon.ico" rel="icon" type="image/png">
54
55  <!-- Stylesheet -->
56  <link href="//drive/static/dist/css/main.min.css" rel="stylesheet"> <link rel="canonical" href="https://www.google.com/drive/">
57  <!-- Google Tag Manager -->
58  <script>(function(w,d,s,l,i){w[l]=w[l]||[];w[l].push({'gtm.start':
59    new Date().getTime(),event:'gtm.js'});var f=d.getElementsByTagName(s)[0],
60    j=d.createElement(s),dl=l!='dataLayer'?'&l='+l:'';j.async=true;j.src=
61    'https://www.googletagmanager.com/gtm.js?id='+i+dl;f.parentNode.insertBefore(j,f);
62    })(window,document,'script','dataLayer','GTM-TRMP25X');</script>
63  <!-- End Google Tag Manager -->
64 </head>
65 <body class="index nav-light">

```

Exercise 1:2 Create your first web page

1. Open your text editor program and choose **File >> Save As** and save as **Ex1_2.html** in your work area. The **file extension** is very important; all .html at the end of the file name.
2. If you saved the file correctly, you will see this:



3. Double-click to open the file – it will open as a blank page in your web browser. If you make a mistake, read instruction (1) and start again.
4. Open the file again in your text editor NOT by double-clicking the file in the browser. Open your text editor program, choose **File >> Open** and navigate to the file.
5. Choose **File >> Save As** and save as **PageTemplate.html**
6. Now add the following code to create a blank web page layout. You can find all the exercises in this booklet.

```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title></title>
5
6      </head>
7
8      <body>
9
10
11  </body>
12 </html>

```

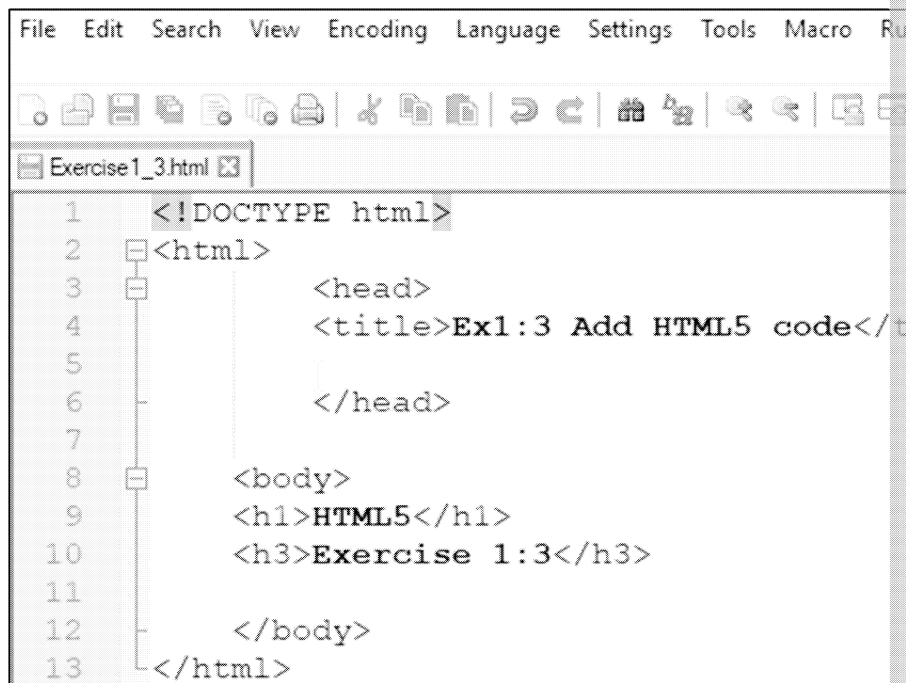
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Exercise 1:3 Add a title and headings

We will now add a title and two headings.

1. Open your text editor program and choose **File >> Open**. Navigate to the file PageTemplate.html and open your file PageTemplate.html.
2. Choose **File >> Save As** and save the file as **Ex1_3.html** in your work folder.
3. Add the following code:



```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Ex1:3 Add HTML5 code</title>
5   </head>
6   <body>
7     <h1>HTML5</h1>
8     <h3>Exercise 1:3</h3>
9   </body>
10 </html>
```

4. Save your file when you have finished adding the extra code. Test out the page in your web browser.

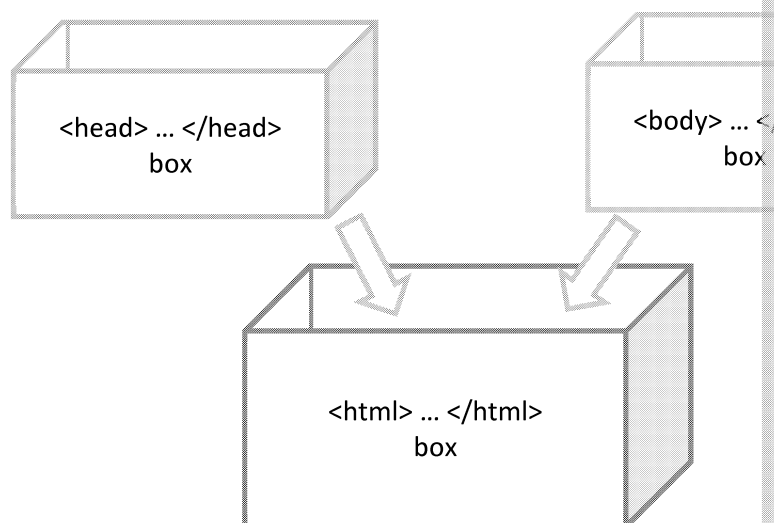
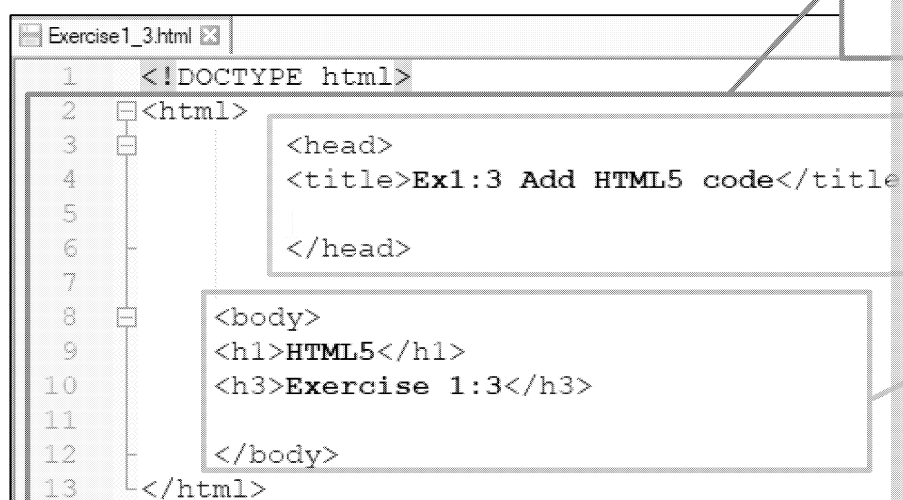
What does the code mean?

In HTML5 most 'tags' or 'elements' are used in pairs: an opening tag and a closing

Apart from the code on Line 1, all the tags in this exercise are used in pairs. Line 1 is the web browser that we are using HTML5.

This tells the browser software that all the code must follow the 'grammar' or syntax of HTML5 or the page may not work correctly.

There are three sets of 'containers' on every web page. It helps to think of these as



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Grammar rules for HTML

1. The first line on a web page tells the web browser what version of HTML has
2. All HTML tags are written in lower case.
3. The opening and closing `<html> ... </html>` tags must surround the head and page.
4. Anything inside the `<head> ... </head>` tags is used (a) by the web browser to search engines and 'web crawlers' to display information in a web search.
5. Only the content inside the `<body> ... </body>` tags appears on the web page

Review Questions 1

1. What is a web browser used for?

To view web pages and websites
To create documents and save them
To search for websites to visit

2. Complete the closing HTML5 tag correctly.

`<p>`This is a paragraph tag

`<p/>`

`<\p>`

`</p>`

3. What important information is found on the first line of code for all web pa

The doctype tag for the HTML version used on the page
The opening `<html>` tag that surrounds the `<head>` and `<body>` containers
The title of the website



4. Do web pages always need to follow the correct HTML grammar in their co

Not really; all web browsers are used to older web pages and it takes too mu
Yes, so that the web browser can then display the page correctly.
Sometimes, if you have enough time to write the correct code. Most web bro
work anyway most of the time.

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Check Your Progress

Basic structure of a web page		
Save files correctly using the .html file extension		
All HTML tags are in lower case		
Make sure all closing tags are correctly added		
Understand the three 'boxes' layout of a basic web page		
The <title> ... </title> tag is the only part of the <head> section that can be seen on a web page		
How to create the basic structure for a web page		
Targets for Topic 1		
1.		
2.		
3.		

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TOPIC 2: HEADINGS, PARAGRAPHS AND CO

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Quick Question

Visit a website of your choice and right-click to see the 'source code'.
Look inside the <meta> tags at the top of the page. Keep the page open.

In a new browser tab/window, go to a search engine of your choice and type in the website. Is there a connection between the code on that web page and the results?

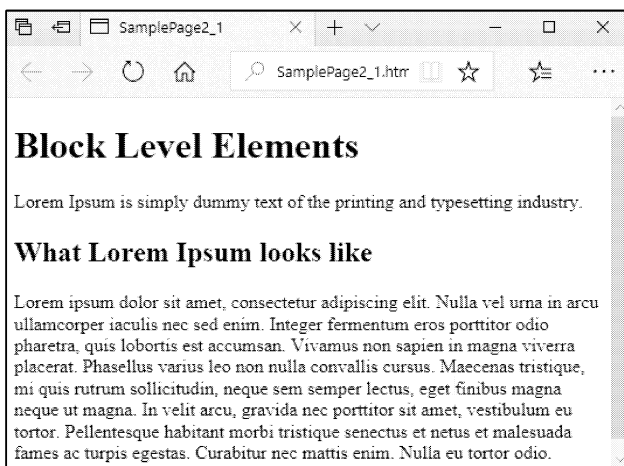
Headings

In Topic 1 we created a basic web page and added a title and two different-sized paragraphs. We also added six different headings, h1 to h6, with h1 being the largest and h6 the smallest.

When the web browser reads that a web page is using the h1 tag, it will put a space below it as all heading tags are known as **block-level elements**.

A block-level element ALWAYS starts on a new line and uses up all the available space on that line depending on the page width.

SamplePage2_1:



Web developers use 'dummy text' such as 'Lorem Ipsum' to show clients what a finished page will look like.



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```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>SamplePage2_1</title>
5
6      </head>
7
8      <body>
9          <h1>Block Level Elements</h1>
10         <p>Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and printed it to produce a sample book.

```

You should also be able to spot the page title on Sample page 2_1. This is the only ... </head> tags that can be seen when the page is viewed in the web browser.

Exercise 2:1 Headings and paragraphs

1. Open your text editor and open your **PageTemplate.html** file from your area. It should look like this:

```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title></title>
5
6      </head>
7
8      <body>
9
10
11     </body>
12 </html>

```

2. Choose **File >> Save As** and save the file in your area as **Ex2_1.html**.
3. Add the title 'Top 5 school subjects'. Make sure this is in the correct place by viewing the page in your browser. All you should see is the title on the page.
4. Add to the 'body' of the page.
 - a. Use the h1 tags for 'My top 5 subjects'
 - i. Using the paragraph tags, add at least two sentences to explain each subject's choices.
 - b. Use the h2 tags for your top subject name.
 - i. Use paragraph tags to write at least two sentences to explain each subject.
 - c. Repeat the above for the next four subjects (continuing from heading level each time)
5. Remember to save your file after each change and check that your code is correct in your web browser regularly.

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Comments

Just like any other programming language, HTML5 has special characters that allow the developer to write comments in their code. Comments are used to explain the code and are not rendered in the browser page.

These could be notes to explain why code has been included so that other developers who may edit the code can understand it. Comments can also be used to mark where sections of a page start or how code has been added to ensure all types of web browser can read the code.

Exercise 2:2 Find the comment code

1. Look at the sample website source code below.

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta http-equiv="X-UA-Compatible" content="IE=edge">
6   <meta name="viewport" content="width=device-width, initial-scale=1">
7
8   <meta name="keywords" content="Education, Teaching, Resources, School, English, ICT, Computing, Maths, Science, Art, Design, Music, PE, History, Geography, Languages, IT, Coding, Robotics, STEM, Etc.">
9
10  <meta name="description" content="Course Companions, Revision Guides, Exam Practice for Secondary Schools, Worksheets, Lesson Plans, PowerPoints, Games, Activities, Projects, etc.">
11
12  <title>ZigZag Education | Teaching Resources for KS3, GCSE, A Level, BTEC, etc.</title>
13
14  <link rel="icon" type="image/png" href="https://zigzageducation.co.uk/theme/images/favicon.ico">
15  <link rel="shortcut icon" type="image/x-icon" href="https://zigzageducation.co.uk/theme/images/favicon.ico">
16
17  <link href="https://zigzageducation.co.uk/theme/css/zz-style.css" rel="stylesheet">
18  <link href="https://zigzageducation.co.uk/theme/css/font-awesome.min.css" rel="stylesheet">
19
20  <script src="https://zigzageducation.co.uk/theme/js/jquery.min.js"></script>
21
22  <!-- HTML5 Shim and Respond.js IE8 support of HTML5 elements and media queries -->
23  <!-- WARNING: Respond.js doesn't work if you view the page via file:// -->
24  <!--[if lt IE 9]>
25    <script src="https://oss.maxcdn.com/libs/html5shiv/3.7.0/html5shiv.js"></script>
26    <script src="https://oss.maxcdn.com/libs/respond.js/1.4.2/respond.min.js"></script>
27  <![endif]-->
```

3. Can you identify the comment code? What are the symbols used to start and end a comment?

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Exercise 2:3 Comment your code



1. Open your file **Ex 2_1.html** in your text editor program. **Choose File** → **Save As** → **Ex2_3.html**
2. Now you know the symbols to use, add comments to your code:
 - a. to explain why the code on Line 1 of your web page is included
 - b. to explain what part of the information in the `<head> ... </head>` is visible in the browser
 - c. to explain where you have used a block-level element or tag, and how a block-level tag has been used when you view the web page in the browser

Review Questions 2

1. **Nothing inside the `<head> ... </head>` is visible on screen.**
True
False
2. **If you look at a web page in the browser, how you can tell which the block-level elements are?**
They always appear in bold on the page.
They always fill all the way across the page.
There will always be a line space before and after a block-level tag.
3. **What are the symbols used to add a comment in HTML5?**
`<!--comment-->`
`<!--comment ->`
`<!-- comment-->`

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Check Your Progress

Headings, paragraphs and comments		
How to use the paragraph tag		
How to code any of the six headings tags		
How to recognise the code that makes up the three boxes of the basic web page structure		
How to add comments to an HTML5 web page		
Targets for Topic 2		
1.		
2.		
3.		

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TOPIC 3: FORMATTING TEXT, BLOCK-LEVEL ELEMENTS

The web pages you have completed so far are just in black and white. In this section we will add colour to text and sections of our page as well as changing the properties of text to make it look better.

- left-aligned, centred or right-aligned
- bold or strong
- italic or emphasised
- highlighted

Hexadecimal colours

Hexadecimal numbers are used by computers and programmers; they are an easy way to represent colours. There are 16,777,216 colours between 0 and 255 using the numbers 0–9 and the letters A–F. The colours are made up of red, green and blue, with each colour having a hexadecimal value written as a pair of characters. For example, 000000 is black and FF0000 is red.

When we add colour to our text, we apply this as a 'style' inside the opening tag for the element.

SamplePage3_1

```
SamplePage3_1.html x
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Top 5 school subjects</title>
5      </head>
6      <body>
7          <h1 style = "color:#FF0000">My top 5 subjects</h1>
8          <p style = "color:#4169E1">It is hard to put
9              like several about the same. These are based
10             about each.</p>
```

As you can see, the code is inserted inside the opening tag:

```
<h1 style = "color:#FF0000">My top 5 subjects</h1>
```

It is important that you get the syntax and all the punctuation in the right place or it won't work.

```
<h1 style = "color:crimson">My top 5 subjects</h1>
```

There are 147 colours that are supported by all modern browsers which can be used by using the hex code OR by using the colour name:

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Why 'color', not 'colour'?

The reasons for this are not entirely clear, but it is likely that the rules for the first HTML were developed in America, so the American spelling of 'color' is used. Using 'colour' does not work!

Exercise 3:1 Experimenting with hexadecimal colours

1. Open your file **Ex2_3.html** in your text editor and choose **File >> Save As** and save it as **Ex3_1.html** in your work area.
2. Visit the website: <https://www.mathsisfun.com/numbers/hexadecimal-colors.html>
3. Choosing suitable colours from the list:
 - a. use the hexadecimal code to change the colour of your first two subjects
 - b. use the colour names to change the colours of your next two subjects
4. Save your file after each code change, and test your changes by viewing it in a web browser software.

Another way of using colours is by applying a background colour to block-level tags. This is done using the `background` property. Look at this example:

SamplePage3_2

```

1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>SamplePage3_2</title>
5   </head>
6   <body style = "background-color:blanchedalmond">
7
8     <h1 style = "background-color:lightpink">Block Level Element</h1>
9
10    <p>Lorem Ipsum is simply dummy text of the printing and typesetting industry.
11  </p>

```

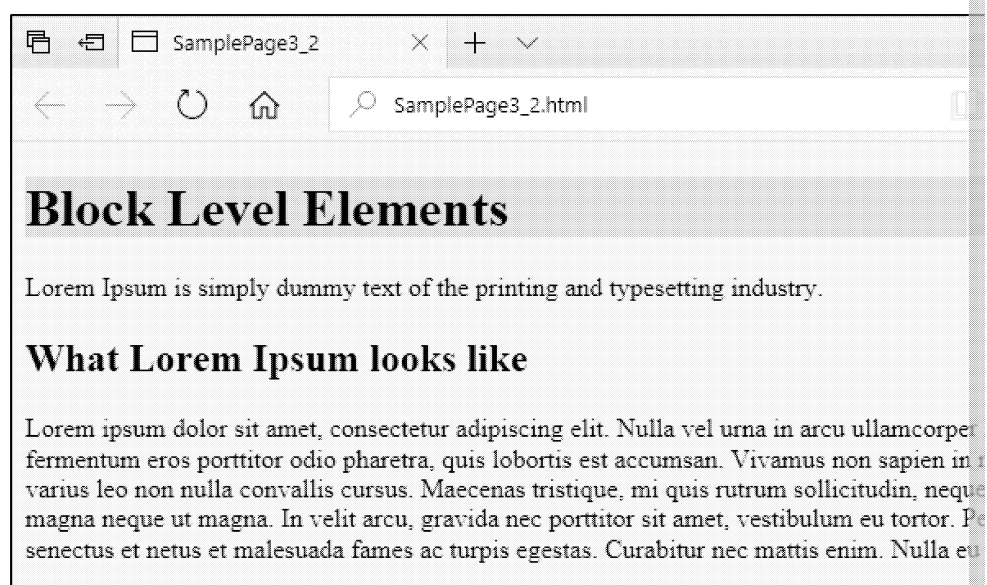
This time the style changes the 'background-color' of the element or tag that you are applying it to.

```

<body style = "background-color:blanchedalmond">

<h1 style = "background-color:lightpink">Block Level Element</h1>

```



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Exercise 3:2 Blocks and backgrounds

In this exercise we will use text resources available in the Topic 3 folder for
The page is about how to make spaghetti bolognese, which is an Italian dish.

1. Open your text editor and open your **PageTemplate.html** file from your drive.
2. Save as **Ex3_2.html** and add the title 'Spaghetti Bolognese'. Save your work and preview in the browser. If you have done this correctly, the only part you will see is the title on the browser tab.
3. Add a heading 1: 'Spaghetti Bolognese'
4. Open the text file **Text_SpaghettiBolognese.txt**, copy all the text and paste it below your heading 1 tag.
5. Now edit the text to split it into blocks:
 - a. Insert paragraph tags around the text that starts with 'PREP: 25 MIN' and 'Balmer.'
 - b. Add heading 2 tags around the subtitle 'Ingredients'.
 - c. Add heading 3 tags around the subtitle 'For the Bolognese sauce'.
 - d. Add paragraph tags around the text that starts '2 x 400g tins plum tomatoes' and '6 cherry tomatoes, sliced in half'.
 - e. Add heading 3 tags around the subtitle 'To season and serve'.
 - f. Add paragraph tags around the text that starts '75g parmesan' and 'to serve (optional)'.
 - g. You should now be left with the text shown below:

Method

Put a large saucepan on a medium heat and add 1 tbsp olive oil. Add the bacon and fry until it is crisp.

Reduce the heat and add the onion, carrot, celery, garlic and rosemary, then cook until it softens.

Increase the heat to medium-high, add the mince and cook stirring for 3-4 mins until it is browned over.

Add the tinned tomatoes, chopped basil, oregano, bay leaves, tomato purée, stock cube and 6 cherry tomatoes. Stir with a wooden spoon, breaking up the plum tomatoes.

Bring to the boil, reduce to a gentle simmer and cover with a lid. Cook for 1 hr until you have a rich, thick sauce. Add the Parmesan, check the seasoning and serve.

When the Bolognese is nearly finished cook the spaghetti following pack instructions. Drain the spaghetti and stir into the Bolognese sauce. Serve with grated Parmesan, the extra basil leaves and the extra bread.

6. Add heading 2 tags to the subtitle 'Method' and paragraph tags around the method.
7. Keep saving and checking your page in the browser. You should be able to see the page easier to read.

Your page should now look like this:

Spaghetti Bolognese

PREP: 25 MINS COOK: 1 HR, 30 MINS EASY SERVES 6 Our best ever spaghetti Bolognese recipe from BBC Good Food user Andrew Balmer.

Ingredients

1 tbsp olive oil 4 rashers smoked streaky bacon, finely chopped 2 medium onions, finely chopped 2-3 sprigs rosemary, leaves picked and finely chopped 500g beef mince

For the Bolognese sauce

2 x 400g tins plum tomatoes small pack basil, leaves picked, 3-4 finely chopped and the rest left whole 1 red chili, seeded and finely chopped (optional) 125ml red wine 6 cherry tomatoes, sliced

To season and serve

75g parmesan, grated, plus extra to serve 400g spaghetti crusty bread, to serve (optional)

Method

Put a large saucepan on a medium heat and add 1 tbsp olive oil. Add the bacon and fry for 10 mins.

Reduce the heat and add the onion, carrot, celery, garlic and rosemary, then fry for 10 mins. Stir.

Increase the heat to medium-high, add the mince and cook stirring for 3-4 mins until the meat is browned.

Add the tinned tomatoes, chopped basil, oregano, bay leaves, tomato puree, stock cube, chili, wine and 6 cherry tomatoes. Stir with a wooden spoon, breaking up the plum tomatoes.

Bring to the boil, reduce to a gentle simmer and cover with a lid. Cook for 1 hr 15 mins stirring occasionally.

When the Bolognese is nearly finished cook the spaghetti following pack instructions. Drain the spaghetti and stir into the Bolognese sauce. Serve with grated Parmesan, the extra basil leaves and the extra bread.

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Exercise 3:2 Part 2

We will now add colour to the text and the blocks.

1. Add a style rule to change the colour of the text in the heading 1 tag to a green similar to the Italian flag colour shown at the start of Exercise 3:1.
2. Change the background colour of the paragraphs that describe the meal alternately honeydew (a pale green) and white.
3. Now change the colour of the text:
 - a. 'Ingredients' to red
 - b. 'For the Bolognese sauce' to green
 - c. 'To season and serve' to red
4. Save, and preview your work in the browser.

Aligning text

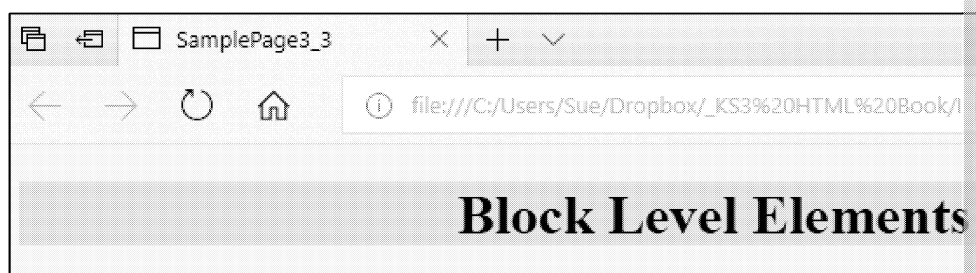
In addition to changing the colour of text, you can add a style to align text, and add italic, or to highlight parts of a sentence. When we use more than one property in a style, the properties are separated by semicolons.

SamplePage3_3

```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>SamplePage3_3</title>
5      </head>
6      <body style = "background-color:blanchedalmond">
7          <h1 style = "background-color:lightpink;text-align:center">

```



In addition to a background colour, the <h1> text is also centred – again, note the

Notice how multiple properties are set for <h1>, all separated by a semicolon (;) – this semicolon – if you miss it out by accident then some styles may not apply.

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Bold, italicised or highlighted text

To add emphasis to parts of the text on your web page, there are several different surround words or phrases so that they look different from the rest of the text.

- ` ... ` or ` ... ` can be used to make text bolder.
- `<i> ... </i>` or ` ... ` can be used to change text to italics.
- `<mark> ... </mark>` can be used to highlight text.

SamplePage3_4

```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>SamplePage3_4</title>
5      </head>
6
7      <body style = "background-color:blanchedalmond">
8
9          <h1 style = "color:blue;background-color:lightpink;text-align:cen
10
11          <p>Lorem Ipsum is simply <mark>dummy text</mark> of the <strong>p
12          industry.</strong> </p>
13
14          <h2>What Lorem Ipsum <em>looks</em> like</h2>
15
16

```

Exercise 3:3 Formatting text

1. Open your file **Ex3_2.html** from your area and save it as **Ex3_3.html**.
2. Complete the following edits:
 - a. Centre the heading 1 tag, 'Spaghetti Bolognese'.
 - b. Split the introduction into paragraph blocks so it looks like this:

Spaghetti Bolognese

PREP: 25 MINS

COOK: 1 HR, 50 MINS

EASY

SERVES 6

Our best ever spaghetti Bolognese is super easy and a true Italian classic with a meaty sauce courtesy of BBC Good Food user Andrew Balmer.

- c. Make all the capitalised words bold.
 - d. Highlight the text 'best ever' in the final paragraph shown above.
 - e. Make the text '(optional)' italic – it appears twice in the ingredients list.
3. Save, and preview your work in the browser.

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Review Questions 3

1. What are the values of the numbers and letters used in hexadecimal colour?
1–9 and A–G
0–9 and A–F
2. Which of the following is used at the start when setting styles to an element?
span =
style =
href =
3. Write the code to change the text in this tag to red.
<h1> Code Red</h1>

.....
.....
4. Correct this code.
<h2 style=background-colour; yellow>Yellow</h2>



.....
.....

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Check Your Progress:

Formatting text, block-level elements and backgrounds		
How to add a style rule to change the text colour		
How to add a style rule to change the background colour of a heading or paragraph tag		
How to split a web page into blocks using paragraph and heading tags		
How to use bold, italics and highlight HTML tags correctly		
How to apply more than one style rule to a heading or paragraph tag using the correct punctuation		
Targets for Topic 1. 2. 3.		

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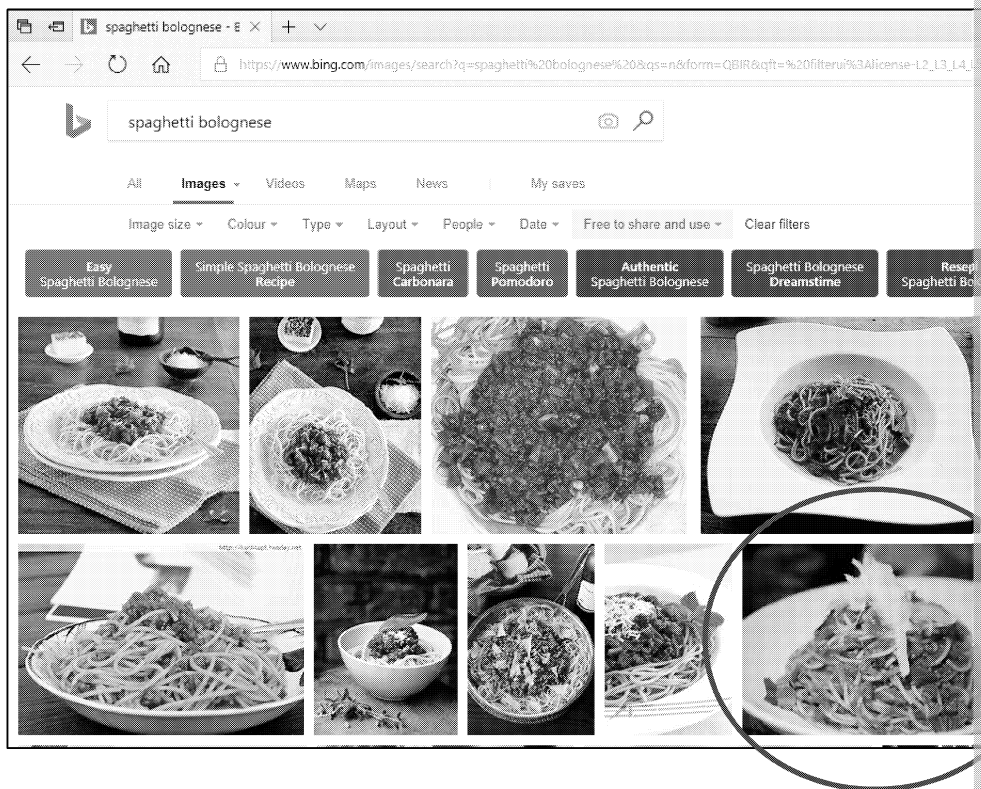
TOPIC 4: IMAGES AND SIMPLE CSS

Images are a vital element of most web pages. They can be used to break up large blocks of text and make the web page more visually appealing.

Quick Question 4:1

I have searched for an image of spaghetti bolognese to use on my web page. How do I save it onto my computer?

Write down the steps you would take to save the image highlighted below



Inserting images

All the HTML tags you have used so far have an opening and closing tag. The code for the `` tag is similar, but it only has one tag where you add the name of the image file you want to display.

```
<img src = "starSample.png">
```

This code will work if the image is in the SAME folder as the web page file. If it is in a different folder, you need to add the **file path** to the name of the file. For example:

```
<img src = "images/starSample.png">
```

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```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>SamplePage4_1</title>
5      </head>
6
7      <body style = "background-color:blanchedalmond">
8
9          <h1 style = "color:blue;background-color:lightpink;text-align:cen
10
11          <p>Lorem Ipsum is simply <mark>dummy text</mark> of the <strong>p
12          industry.</strong> </p>
13
14          <h2>What Lorem Ipsum <em>looks</em> like</h2>
15
16          <img src = "starSample.png">

```

In my example the image is too large. In exactly the same way as we applied a style to set the text colour or background colour of a tag, we can set the height and/or the width in pixels, as follows:

```
<img src = "starSample.png" style = "height:250px;width:220px">
```

Note that by setting *both* the height and width, you run the risk of changing the 'aspect ratio' ratio (or in simple terms, squashing or stretching the image) if you do not keep the same width to height ratio as the actual image.

For this reason it is better to set *either* the width *or* the height, which allows the image to be scaled proportionately.

What is alt text?

Web developers use the ALT text (alternate text) attribute of images to help describe images for people who have vision problems. Many people with limited vision use software called screen readers to read the content of the web page to the user, so a written description of images used is vital.

You should add a short 'alt text' description to all your images as shown in this example:

```
<img src = "starSample.png" alt = "Orange star with Lorem Ipsum text" style = "height:250px;width:220px">
```

Exercise 4:1 Inserting images

1. Open your file **Ex3_3.html** from your area and save it as **Ex4_1.html**.
2. Use a search engine to find your own image for 'Spaghetti Bolognese' image file in the same folder as **Ex4_1.html** with a suitable name.
3. Add the HTML image tag to add your picture to the recipe page, adjust the width and height, and add your ALT text.
4. Save and preview your work in the browser.

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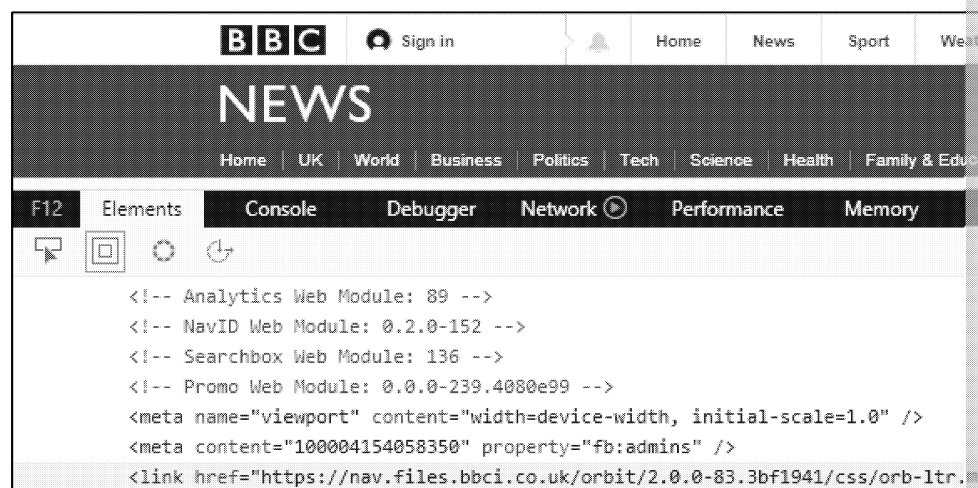
CSS: cascading style sheets

When you are designing and developing web pages, you use HTML to create the paragraphs and images and CSS to control how the web page looks, i.e. the colour and positions of the content.

There are two different ways of using cascading style sheets:

- Internal
- External

Websites with hundreds of pages such as the BBC website use external style sheets. The code will ALWAYS be inside the head tags and finish with `.css`. The CSS file will control the page should look. You can see the file path for the document highlighted in the



Simple websites with less pages may use internal style sheets, such as this example:

SamplePage4_2



Where instead of setting all the styles inside each HTML tag like this...

```
<body style ="background-color:blanchedalmond">
```

... the styles used on the page are written inside `<style> ... </style>` tags which are in the `<head>` section. The way you write CSS INSIDE the `<head>` tags has similarities and differences to writing CSS in an external file.

Quick Question 4:2

Look at the code in SamplePage4_2 and SamplePage4_1. What are the differences between the two ways of adding a background colour?

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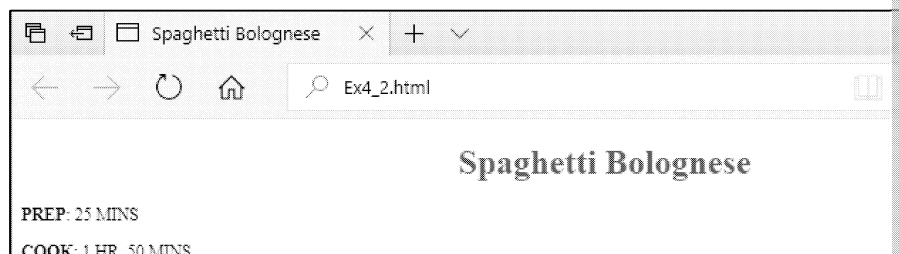
Exercise 4:2 Using internal CSS

1. Open your file **Ex4_1.html** from your area and save it as **Ex4_2.html**.
2. Write the style rule that applies to the h1 tag inside the <head> tags. **SamplePage4_2** for help.

Your h1 tag should now look like this in your code:

```
<h1>Spaghetti Bolognese</h1>
```

and like this on your page:



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CSS: Using class selectors

Look at line 26 and 32 in the code below. You can see that the colour is set manually. The first one is set to *crimson* and the second one is set to *navy*.

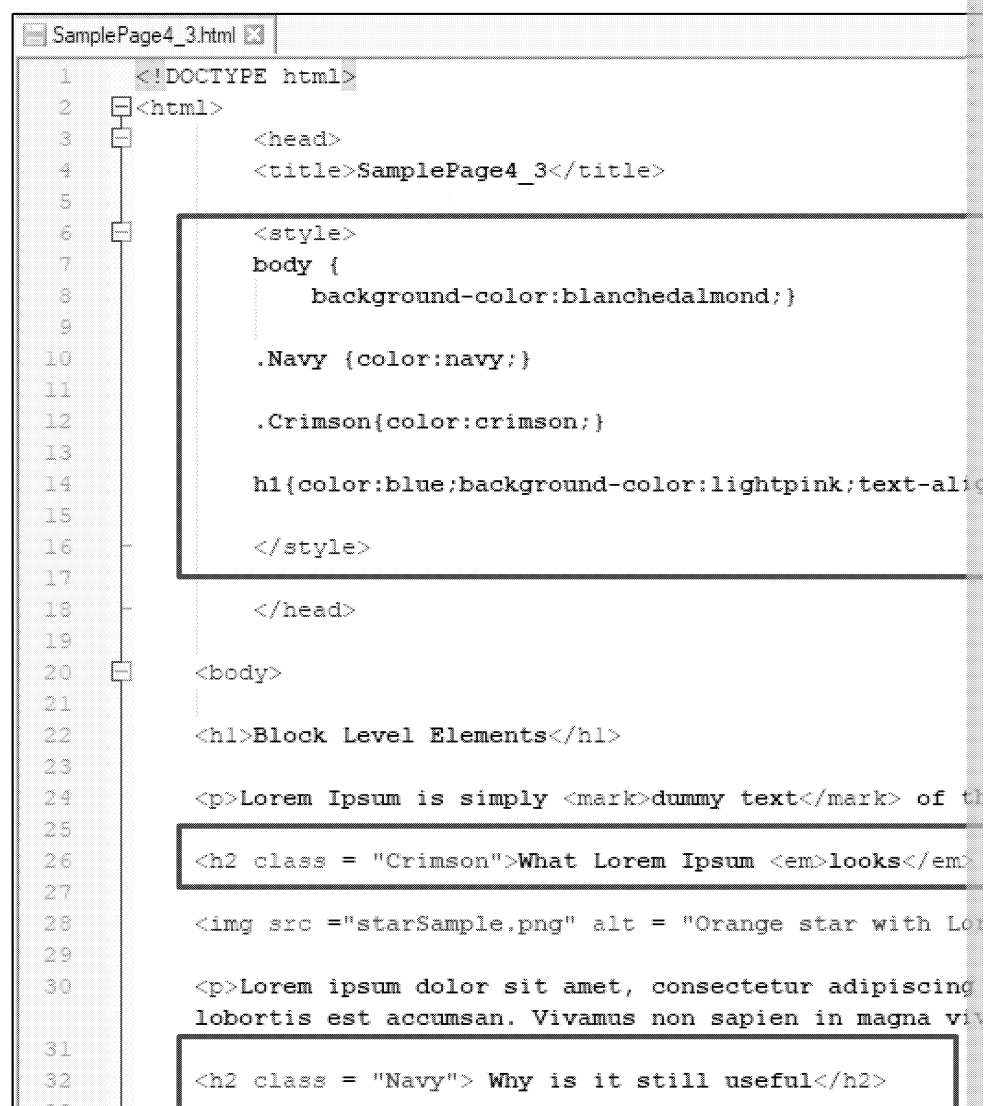
```

26      <h2 style= "color:crimson">What Lorem Ipsum <em>looks</em>
27
28      <img src ="starSample.png" alt = "Orange star with Lorem Ip
29
30      <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit.
    lobortis est accumsan. Vivamus non sapien in magna viverra
31
32      <h2 style = "color:navy"> Why is it still useful</h2>
33

```

This is an acceptable way of changing the styling of something as a one off, but let's say you had a large number of headings that you wanted to change the colour of, it would be better to use a class selector.

With a class I can create my own rules and decide where to use them so that I can style different headings different colours.



```

SamplePage4_3.html x
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <title>SamplePage4_3</title>
5
6  <style>
7  body {
8      background-color:blanchedalmond;}
9
10 .Navy {color:navy;}
11
12 .Crimson{color:crimson;}
13
14 h1{color:blue;background-color:lightpink;text-align:center;}
15
16 </style>
17
18 </head>
19
20 <body>
21
22 <h1>Block Level Elements</h1>
23
24 <p>Lorem Ipsum is simply <mark>dummy text</mark> of the Lorem Ipsum
25
26 <h2 class = "Crimson">What Lorem Ipsum <em>looks</em>
27
28 <img src ="starSample.png" alt = "Orange star with Lorem Ipsum" />
29
30 <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit.
    lobortis est accumsan. Vivamus non sapien in magna viverra
31
32 <h2 class = "Navy"> Why is it still useful</h2>
33

```

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How to write your own class selector style rule:

1. ALL class selectors MUST start with a FULL STOP.
2. The name of the rule CANNOT start with a number.

You can now use your rules anywhere in the page by adding the name of the CLASS. The rules for Navy and Crimson in this example could also be used inside the <p> ... </p>

```
<h2 class = "Navy"> Why is it still useful</h2>
```

Exercise 4:3 Using class selectors

1. Open your file **Ex4_2.html** from your area and save it as **Ex4_3.html**
2. Write class selector style rules for each colour, text and background used on the Bolognese web page.
3. Save, and preview your work in the browser.

Review Questions 4: Variables



1. Which is the correct code to insert an image with the file name star.png?

2. Why is it important to use ALT tags when inserting images in a web page?
 If the picture file does not work, the web page shows the text.
 People using a screen reader know that the page has a picture and what it is.
 It is not really important as you can see the picture anyway.
3. What is HTML used for on any web page?
 To control the way the page looks, i.e. the colours and where the pictures appear.
 To create the page structure and determine where headings and paragraphs are.
4. On which part of the web page are the rules for internal CSS written?
 Inside the individual HTML tags where they are needed
 Inside the <body> ... </body> tags of the page
 Inside the <head> ... </head> tags of the page

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Check Your Progress

Images and simple CSS		
How to insert an image using the correct punctuation and ALT text		
How to insert an image using the correct punctuation and alt text, and set the height and width		
How to use the <style> ... </style> tags correctly on the web page inside the <head> ... </head> tags		
How to write a style rule for a heading tag in the internal style sheet		
How to write individual rules using a class selector in the internal style sheet		
How to correctly apply a class selector style rule to a heading or paragraph tag		
Targets for Topic 5		
1.		
2.		
3.		

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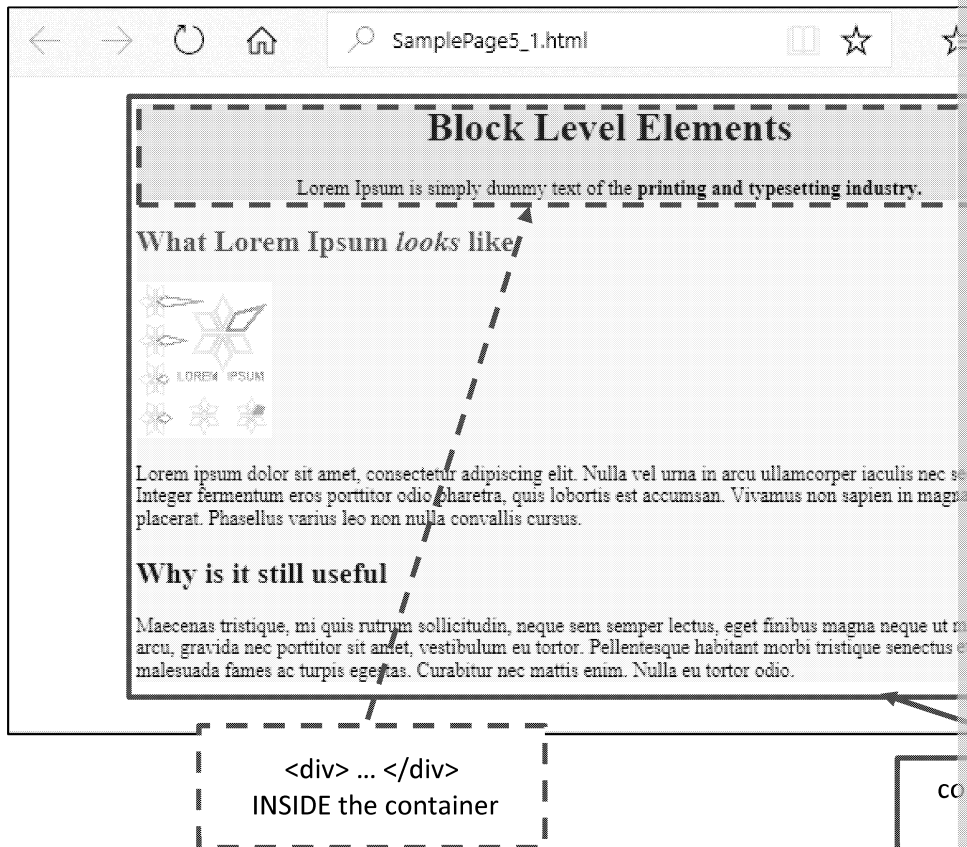
TOPIC 5: USING DIV TAGS ON A WEB

This additional tag is useful in creating boxes on our web page so that a style rule can be applied to paragraphs and a heading at the same time, for example.

We can also write style rules to control the size of the 'boxes' just as we have for tables to improve the look of our page.

Step 1: Create a 'container' for the page content

Most websites have a layout that has the text and images in a central 'container'. These 'boxes' can then be put inside this 'container' to complete the page layout.



Exercise 5:1 Create a page container and apply a CSS style

For this exercise you will be following the example provided for you to edit the page.

1. Make sure you have copied these two files into your area:
 - a. **StudentExercisePage1.html**
 - b. **div_tag.png**

How to use div tags

HTML (div) tag

A div tag is also known as a block-level element which can be used to divide up your webpage.

Grouping areas of your page together using a div tag is an easy way to apply formatting to several items at once.

They are also commonly used as an easy way to centre the content of the page and create a border around the edge of the content.

2. Open your text editor program, use **File >> Open** and navigate to the

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3. Add the `<div> ... </div>` tags as shown with the comments (lines 9–18)

```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Student Exercise Page</title>
5      </head>
6
7
8      <body>
9          <div> <!--container div to centre the page-->
10
11              <h1>How to use div tags</h1>
12              <img src ="div_tag.png" alt = "HTML <div> tag" />
13              <p> A div tag is also known as a block-level element.
14
15              <p>Grouping areas of your page together using a div tag is an easy way to apply formatting to several items at once.
16              <p>They are also commonly used as an easy way to centre the content of the page and create a border around the content
17
18          </div> <!--End of the container div-->
19      </body>
20 </html>

```

4. Now add an internal style sheet and the class selector style rule that we need

```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Student Exercise Page</title>
5
6          <style>
7              .container {
8                  width:80%;
9                  margin:0 auto; <!-- centres the contents of the page -->
10             }
11          </style>
12
13      </head>

```

5. Add a style rule for the background of the **body** of the page to be 'pink'
6. Add a style rule to the 'container' class selector to change the background to 'lightblue'.
Tip: this must be the first rule above 'width: 80%;'
7. Save, and check that your page looks like this:

How to use div tags

HTML (div) tag

A div tag is also known as a block-level element which can be used to divide up your webpage.

Grouping areas of your page together using a div tag is an easy way to apply formatting to several items at once.

They are also commonly used as an easy way to centre the content of the page and create a border around the content of the page

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Quick Question

Why have we set the width at 80% rather than a value such as 1000 pixels?
Experiment by enlarging and reducing the size of your current web page. What do you notice?
Now change the size in the style rule for the width from 80% to 1000px and try enlarging and reducing again. What do you notice?

Why is my CSS not working?

Check for these possible causes:

- Ordinary brackets instead of curly braces
- No semicolon at the end of each rule
- Incorrectly using a semicolon to separate the property and the value
- Spelling the name of the class selector incorrectly
- Forgetting to add the full stop at the start of a class selector
- Including the full stop when applying a class selector to a block-level element

Exercise 5:2 Nesting one div inside another

1. Open your text editor program, use **File >> Open** and navigate to the **StudentExercisePage1.html**. Save the file as **Ex5_2.html**
2. Make sure that you have the page width set at 80%.
3. Edit the HTML code to insert another div as shown below.

```

18 <body>
19 <div class = "container"> <!--container div to centre
20
21 <div> <!--header-->
22 <h1>How to use div tags</h1>
23 <img src ="div_tag.png" alt = "HTML <div> tag">
24 </div> <!--end of header-->
25

```

4. Write a class selector style rule called **‘.header’** to centre the **text**.
5. Add a style rule to make the background colour **‘lightgray’**.
6. Apply the class selector to the **‘header’** div.
7. Save and preview in the browser.

Adding images as a background

We have already learnt how to insert an image and how to add a background colour to block-level elements. We will now look at how to add an image as a background.

Exercise 5:3 Background images

1. Open your text editor program, use **File >> Open** and navigate to the **StudentExercisePage1.html**. Save the file as **Ex5_3.html**
2. Make sure that you have the image file **‘CodeEx.png’** saved in the same directory as the HTML file.
3. Add the code below to your **‘container’** style rules.

```

<style>
.container {
    background-image:url (CodeEx.png);
    background-size: 80% 100% ;
    height:250px;
    background-repeat: no-repeat;
    background-color:white;
    width:80%;
    margin:0 auto; <!-- centres the contents on the page
}

```

4. Experiment with changing the values of **background-size** and **background-repeat** until you are happy with the result.
5. Save, and preview in the browser.

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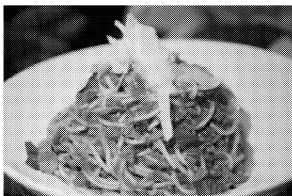


Exercise 5:4 Putting it all together

1. Make sure you have copied these three files into your area:
 - a. **StudentExercise2.html**
 - b. **SpaghettiBolognese.jpg**
 - c. **map_Italy.png**
2. Use the colour 'honeydew' for the light green and the hex code '#ffcc00'.
3. The map size is 80% 80% and its background position is centred.
4. Make sure you add comments so that you can see where you have divided the page.
5. Using the information provided and the exercises you have completed,

Spaghetti Bolognese

PREP: 25 MINS
COOK: 1 HR, 50 MINS
EASY
SERVES 6



Our best ever spaghetti Bolognese is super easy and a true Italian classic with a meaty, chilli sauce. This recipe comes courtesy of Andrew Balmer.

Ingredients

1 tbsp olive oil 4 rashers smoked streaky bacon, finely chopped 2 medium onions, finely chopped 2 carrots, trimmed and finely chopped 2 garlic cloves, finely chopped 2-3 sprigs rosemary, leaves picked and finely chopped 500g beef mince

For the Bolognese sauce:

2 x 400g tins plum tomatoes small pack basil, leaves picked, 3/4 finely chopped and the rest left whole for garnish 1 tsp dried oregano tomato puree 1 beef stock cube 1 red chilli, seeded and finely chopped (optional) 125ml red wine 6 cherry tomatoes, sliced in half

To season and serve

75g parmesan, grated, plus extra to serve 400g spaghetti crusty bread, to serve (optional)

Method

Put a large saucepan on a medium heat and add 1 tbsp olive oil. Add the bacon and fry for 10 mins until golden and crisp.

Reduce the heat and add the onion, carrot, celery, garlic and rosemary, then fry for 10 mins. Stir the veg often until it softens.

Increase the heat to medium-high, add the mince and cook stirring for 3-4 mins until the meat is browned all over.

Add the tinned tomatoes, chopped basil, oregano, bay leaves, tomato puree, stock cube, chilli, wine and cherry tomatoes. Stir with a wooden spoon until the plum tomatoes are broken down.

Bring to the boil, reduce to a gentle simmer and cover with a lid. Cook for 1 hr 15 mins stirring occasionally, until you have a rich, thick sauce. Add the parmesan, check the seasoning and stir.

When the Bolognese is nearly finished cook the spaghetti following pack instructions. Drain the spaghetti and stir into the Bolognese. Sprinkle with extra parmesan, the extra basil leaves and crusty bread.

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Review Questions 5

1. A div tag is a block-level tag. Name two other block-level tags that you have used.

.....

.....

2. Identify the problem with this CSS style rule:

```
<style>

    .2_3 header(
    text-align:centre)<!-- applies to h2 and
```

.....

.....

3. I have written another style rule for h1. How do I apply this to my div?

```
h1{color:green;
text-align:center;
}
```

```
52 | </head>
53 | <body>
54 | <div class = "container">
55 | <div class="Table">
56 |     <div>
57 |         <h1>This is a Table</h1>
58 |     </div>
```

.....

.....

4. What is the difference between HTML code and CSS code?



.....

.....

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Check Your Progress

Using div tags on a web page		
Understand that a div tag can be used to create different blocks on a web page		
Know how to read the HTML code and put div tags in the correct place to surround the body of the page		
Know how to add comments to explain the start and end of each set of div tags		
Understand that several sets of div tags can be 'nested' inside each other, like several small boxes in a larger box		
How to apply a class selector to the contents of a div		
Targets for Topic 6 1. 2. 3.		

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TOPIC 6: ORDERED AND UNORDERED

In the sample page we have created for Spaghetti Bolognese, it would be much clearer to put the ingredients and instructions into a list.

There are two types of list that we can use: a numbered list or a bulleted list.

The tags for the ordered list are ` ... `:

```
<ol>
  <li>This is the first item in the list </li>
  <li>My second item</li>
  <li>Finally the third item</li>
</ol>
```

Ordered Lists

1. This is the first item in
2. My second item
3. Finally the third item

The tags for the bulleted or unordered list are ` ... `:

Unordered lists

The only difference with a bulleted or unordered list is the tags that surround the list. Every

- Eggs
- Milk
- Bread

```
<ul>
  <li>Eggs </li>
  <li>Milk</li>
  <li>Bread</li>
</ul>
```

Adding CSS style rules to lists

We can do this in exactly the same way as we have applied rules to other block-level

- writing a class selector and applying the rule to the HTML tag
- writing a style rule that applies to the HTML tag

Here are the style rules for each type of list:

```
<style>
ol{font-family: Arial, Helvetica, sans-serif;
   color:blue;}

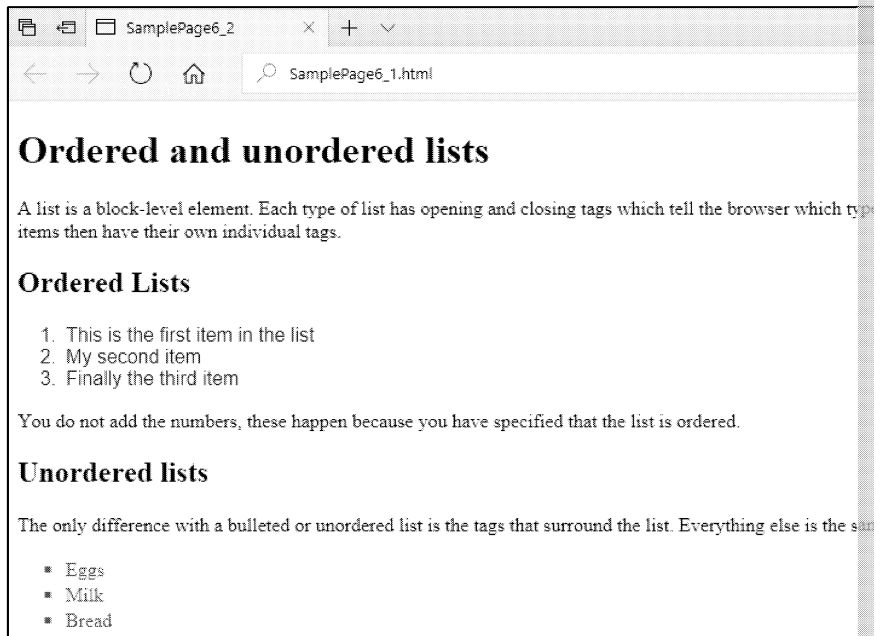
.bullets{
list-style-type: square;
font-family:Times New Roman, serif;
color:crimson;}
</style>
```

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You can see that the font type and the style of the bullets in the unordered list can



Exercise 6:1 Ordered and unordered lists

1. Open your text editor program, use **File >> Open**, navigate to the Page saved in **Exercise1_2** and save it as **Ex6_1.html**
2. Using the information on the next page, create this web page and write style rules to improve the look of the final web page.
3. ALL CSS must be written as an internal style sheet, i.e. inside the `<head>`
4. Your web page **MUST** have:
 - a. at least two heading styles, e.g. h1, h2
 - b. at least three colours, e.g. change the colour of text or a block level element
 - c. at least one image but no more than three
 - d. at least one div tag
 - e. two comments to explain your HTML code
5. Try to use as many of the techniques you have been learning about as possible.
6. Use the CSS examples on the following pages to help you with ideas.

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Ordered and unordered lists

A list is a block-level element. Each type of list has opening and closing tags which tell the browser how to display the list. Each list item has its own individual tags.

Ordered Lists

1. This is the first item in the list
2. My second item
3. Finally the third item

You do not add the numbers, these happen because you have specified that the list is ordered.

Unordered lists


The only difference with a bulleted or unordered list is the tags that surround the list. Everything

- Eggs
- Milk
- Bread

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CSS examples

Example CSS style rule	
<pre>h1{ color: red; font-size: 150%; text-decoration: underline }</pre> <p>Hint: You can use % to change font sizes.</p>	
<pre>h2{ font-family: Arial, Helvetica, sans serif; color: #800080; }</pre>	
<pre>p { font-style: italic; }</pre>	
<pre>.underline_stars { text-align:center; background-image:url(stars.png); background-position: center bottom; background-repeat: repeat-x; background-color: black; height: 50px; width:20%; }</pre>	 <p>This uses an image of 8 s class selector is applied t</p>

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What it looks like
This is serif text.
This is sans serif text.
This is monospace.
This is a cursive font.
THIS IS FANTASY TEXT

a letter. This is serif text.

tails and is seen as more modern. This is sans serif text.

ake up the same amount of space. This is monospace.

is is a cursive font.

USED FOR HEADINGS BUT NOT GENERAL TEXT.

Example CSS style rule

```
.imgBox {
  display: inline-block;
  margin: 10px;
}
```

Display images in a block

Using CSS and a div tag around each image



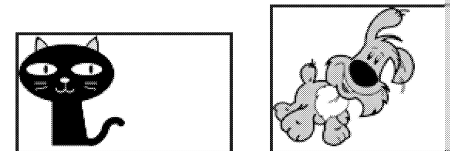
```
<div class = "imgBox">
<img src = "cat.png" alt= "
</div>
<div class = "imgBox">
<img src = "dog.png" alt = "
</div>
<div class = "imgBox">
<img src = "cat.png" alt= "
</div>
<div class = "imgBox">
<img src = "dog.png" alt = "
</div>
```

```
div {
  border-width: 2px;
  border-style: solid;
  border-color: blue;
}
```

Note: This rule would apply to every use of <div> on your page. Write this as a class selector and apply to the div you want a border around.

Display images in a block

Using CSS and a div tag around each image



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Exercise 6:2 Improving your code

You should now have enough knowledge and skill to improve our original page about Spaghetti Bolognese

1. Open your text editor program, use **File >> Open**, navigate to **Ex5_4.html** and save as
2. Improve the page to look like the one below:

Spaghetti Bolognese



Our best ever Spaghetti Bolognese is super easy and a true Italian classic with a meaty, chilli sauce. This recipe comes courtesy of BBC Good Food user Andrew Balmer.

- **PREP:** 25 MINS
- **COOK:** 1 HR, 50 MINS
- **EASY**
- **SERVES** 6

Ingredients

- 1 tbsp olive oil
- 4 rashers smoked streaky bacon, finely chopped
- 2 medium onions, finely chopped
- 2 carrots, trimmed and finely chopped
- 2 celery sticks, finely chopped
- 2 garlic cloves, finely chopped
- 2-3 sprigs rosemary, leaves picked and finely chopped
- 500g beef mince

For the Bolognese sauce

- 2 x 400g tins plum tomatoes
- small pack basil, leaves picked, 3/4 finely chopped and the rest left whole for garnish
- 1 tsp dried oregano
- 2 fresh bay leaves
- 2 tbsp tomato puree
- 1 beef stock cube
- 1 red chilli, seeded and finely chopped (*optional*)
- 125ml red wine
- 6 cherry tomatoes, sliced in half

To season and serve

- 75g parmesan, grated, plus extra to serve
- 400g spaghetti crusty bread, to serve (*optional*)

Method

1. Put a large saucepan on a medium heat and add 1 tbsp olive oil. Add the bacon and fry for 10 mins until golden and crisp.
2. Reduce the heat and add the onion, carrot, celery, garlic and rosemary, then fry for 10 mins. Stir the veg often until it softens.
3. Increase the heat to medium-high, add the mince and cook stirring for 3-4 mins until the meat is browned all over.
4. Add the tinned tomatoes, chopped basil, oregano, bay leaves, tomato puree, stock cube, chilli, wine and cherry tomatoes. Stir with a wooden spoon.
5. Bring to the boil, reduce to a gentle simmer and cover with a lid. Cook for 1 hr 15 mins stirring occasionally, until you have a rich, thick sauce.
6. When the Bolognese is nearly finished cook the spaghetti following pack instructions. Drain the spaghetti and stir into the Bolognese sauce.

Hints:

1. The Italy map image is the **body** of the page.
2. You can add a class to the ` ... ` tags.

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Review Questions 6

1. Write the HTML code to add this list to a web page:

1. Bread
2. Milk
3. Eggs

2. Write the style rule to make ALL the text in this unordered list green

- Sandals
- Beach towel
- Sunglasses

3. Write down three block-level elements that could be used in a web page.



4. What is the correct code for writing a comment 'Header ends' to show the end of a header?

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Check Your Progress

Ordered and unordered lists		
Know the different tags to surround the list items in an unordered list		
Know the different tags to surround the list items in an ordered list		
Know how to add list items to both these lists		
Know how to write simple CSS style rules for an ordered or unordered list		
Targets for Topic 7		
1.		
2.		
3.		

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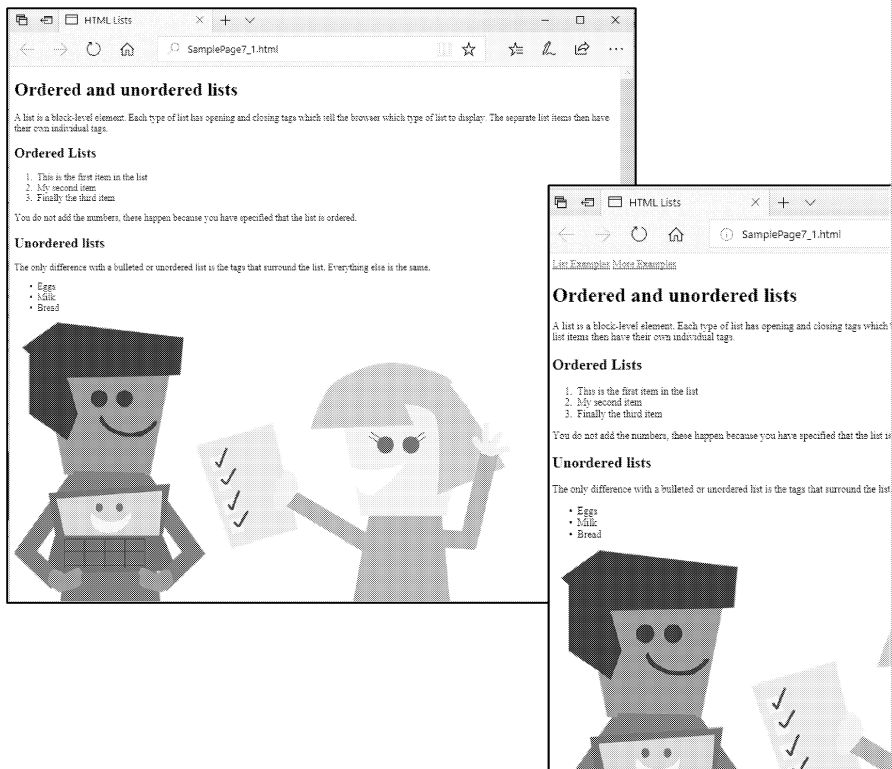
TOPIC 7: HYPERLINKS

What is a hyperlink?

Any item on a web page that changes your mouse cursor from an arrow to a pointer. When you click on the link, it will take you to different part of the current web page or to a different website. Hyperlinks can be text or images.

Linking to another part of your web page

SamplePage7_1



In this example there is content further down the page that cannot be seen with

Two hyperlinks have now been added to the top of the page, by clicking them you can jump further down the page.

Step 1:

Add a 'bookmark' at the place in the page you want to jump to, using the code 'id'

```
<h3 id = "Examples">Examples of list</h3>
```

Each bookmark must have a unique

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Step 2:

Add the code to link to the bookmark.

```
<body>
<a href = "#Examples">List Example
```

This is entered at the start of the 'body' section of the web page.

This is the text that will show on the web page.

Exercise 7:1 Inserting bookmark links

1. Open your text editor and navigate to open the file **Ex7_1.html** from the **7_StudentExercise Resources** folder. Choose **File >> Save As** and save the file as **Ex7_1.html**.
2. Ensure that you also copy the two image files from the same folder into the same folder as **Ex7_1.html**:
 - a. cat.png
 - b. dog.png
3. Create bookmark links at the top of the web page for each of the sub-topics:
 - a. Cat_History
 - b. Cat_Behaviour
 - c. Dogs_Humans
 - d. Dogs_Pets
4. Save your work and check it works in your browser.

Improving the look of your bookmarks

This is done using CSS. Each text hyperlink has four different states:

- **a:link** This is the normal colour before you click, usually blue
- **a:visited** This is the colour change after you click the link, usually purple
- **a:hover** The colour when you move the mouse over the text, usually red
- **a:active** When the link is actually clicked

With some simple changes to the CSS of each of the links, we can make our work look like this example:

SamplePage7_2

[List Examples](#) [More Examples](#)

Ordered and unordered lists

A list is a block-level element. Each type of list has opening and closing tags which tell the browser which items then have their own individual tags.

Ordered Lists

1. This is the first item in the list

The bookmark links at the top of the page seen earlier in SamplePage7_1 now look like this. All these style rules have been used before in other exercises.

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These have been combined into two different sections for [a:link, a:visited] and [a

```
<style>
a:link, a:visited {
    background-color: green;
    font-family:sans serif,Arial;
    color: white;
    padding: 14px 25px;
    text-align: center;
    text-decoration: none;
    display: inline-block;
}
a:hover, a:active {
    background-color: yellow;
    color:green;
}
</style>
```

List Examples

Padding sets the of inner (the space between the t

Setting *text-decoration* to from the hyperlink text.

List Examples



When the mouse is move on the background and to

Exercise 7:2 Styling bookmarks with CSS

1. Open your text editor and open the file **Ex7_1.html** from the last exercise. Choose **File >> Save As** and save as **Ex7_2.html**.
2. Using the example above as a guide to help you, improve the four bookmarks. You should try to:
 - a. use different colours for the backgrounds and text
 - b. experiment with changing the padding values
 - c. change the font-family or font-size
3. Save your work and check it works in your browser.

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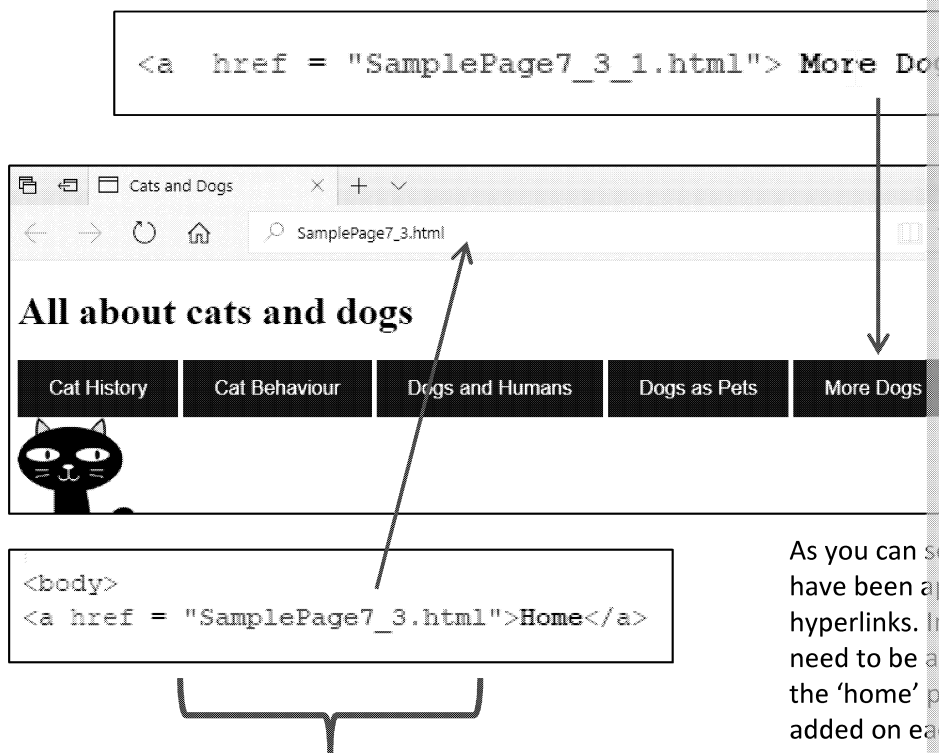


Linking to another page in your website

This is very similar to creating a bookmark and uses the same HTML tag:

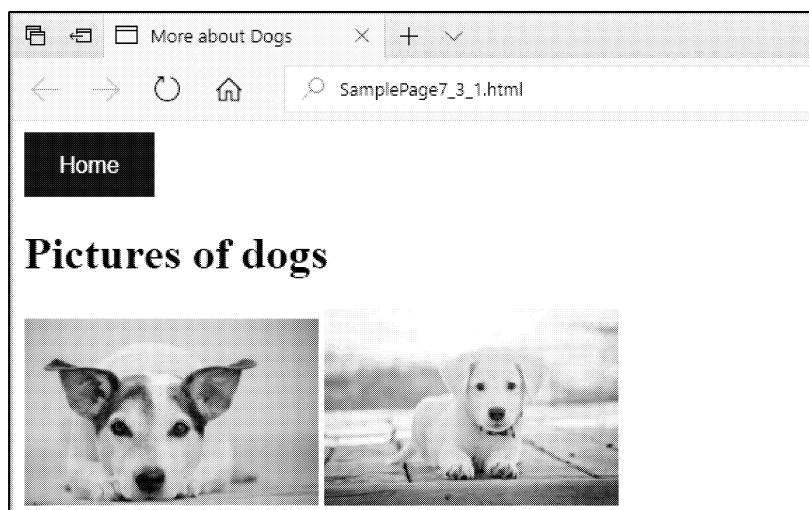
```
<a href = "filename">Text to display</a>
```

SamplePage7_3



As you can see, the 'Home' button has been added to the navigation bar. It is a hyperlink. It needs to be added to the 'home' page. It is added on each sample website.

The filename must be correct or the link will not work.



What is a URL?

In technical terms, URL stands for 'uniform resource locator', which means the location of a file on a computer called a web server somewhere on the Internet. These files could be web pages, images, or software.

URL is pronounced U-R-L. A URL:

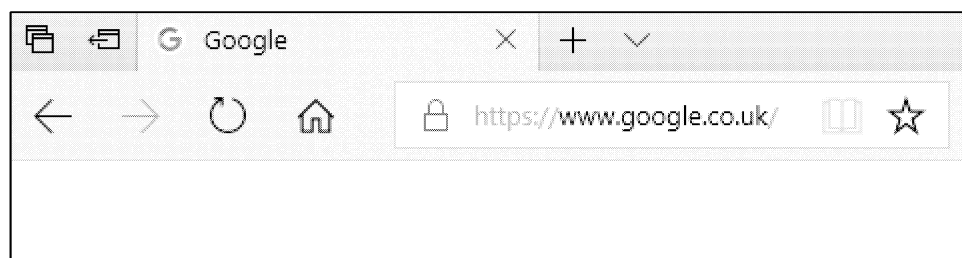
- always starts with HTTP, or HTTPS for a secure website such as an online bank
- is always followed by `://www`, which means the file is somewhere on the World Wide Web
- is always followed by the name of the website address

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In the example at the bottom of the page, the website is for a charity based in the UK and the address includes .org.uk

In the example here, the address shows that Google is a business based in the UK and the address includes .co.uk. **protocol**. Any website where you are able to enter your username and a password to keep your login details safe.



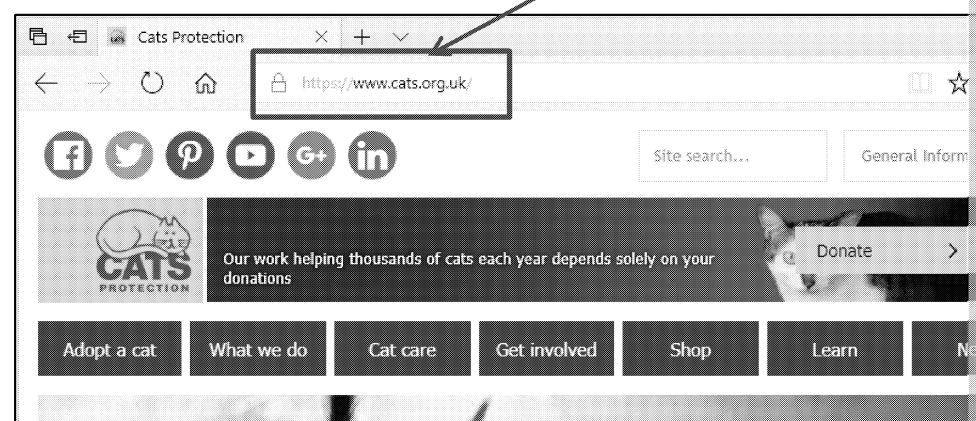
Some definitions

- Internet:** the actual computers and equipment that link together to create the World Wide Web
- World Wide Web:** all of the web pages, documents, images, sound files, video files and other resources that can be accessed using a web browser
- Protocol:** the rules used to allow communication between computers

Linking to a Different Website

Linking to a website uses exactly the same HTML tag; the key difference is that you use a different URL to point to the website:

`Text to display`



the Cats Protection website ``

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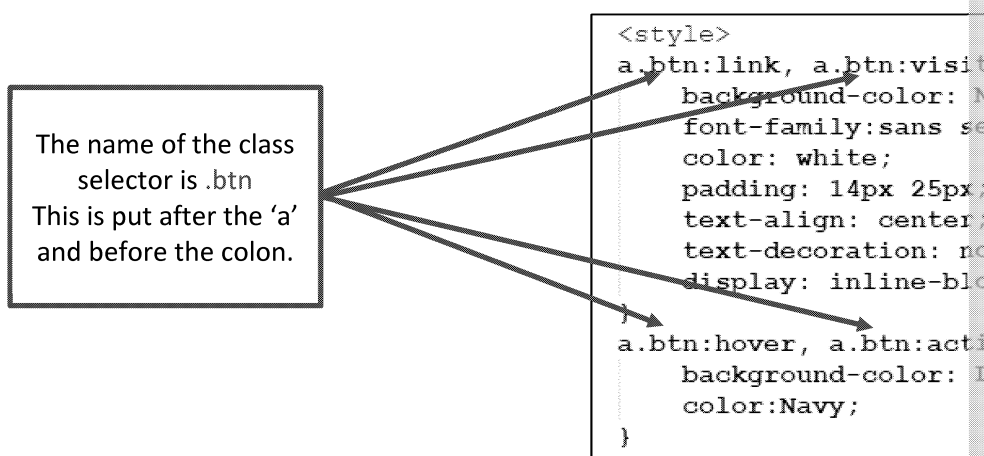


If I want the hyperlink to show as a text hyperlink only, I need to make some changes



```
<a class = "btn" href = "#Cat_History"> Cat History</a>
<a class = "btn" href = "#Cat_Behaviour"> Cat Behaviour</a>
<a class = "btn" href = "#Dogs_humans"> Dogs and Humans</a>
<a class = "btn" href = "#Dogs_Pets"> Dogs as Pets</a>
```

By adding a selector name to each of the four stages of the hyperlinks and applying a class to each link that you want to show as a button, you can have both styles.



Exercise 7:3 Hyperlinks to other pages and websites

1. Open your text editor and open the file **Ex7_2.html** from the last exercise. Choose **File >> Save As** and save as **Ex7_3.html**.
2. Choose **File >> Open** and navigate to the file PageTemplate.html saved back in the last exercise. Choose **File >> Save As** and save this as Dogs.html in the same folder as Ex7_2.html.
3. Add the following to this page:
 - a. a page title 'Pictures of dogs'
 - b. a heading 'More dogs'
 - c. at least two pictures of dogs but no more than four. Each must have an extra credit, use CSS to set the size of each image to a suitable percentage.
 - d. A hyperlink with the text 'Home' which links back to the web page Ex7_2.html.
4. Add suitable CSS to style your page and your hyperlink as an internal styles.
5. Add a link to the 'Home' page (**Ex7_3.html**) to link to the 'More Dogs' page.
6. Add a text hyperlink to the website for The Dogs Trust.
Hint: You will need to search for the correct URL.
7. Save your work and check it works in your browser.

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Hyperlinks using images

In exactly the same way as we have created text hyperlinks, we can also insert hyperlinks using images.

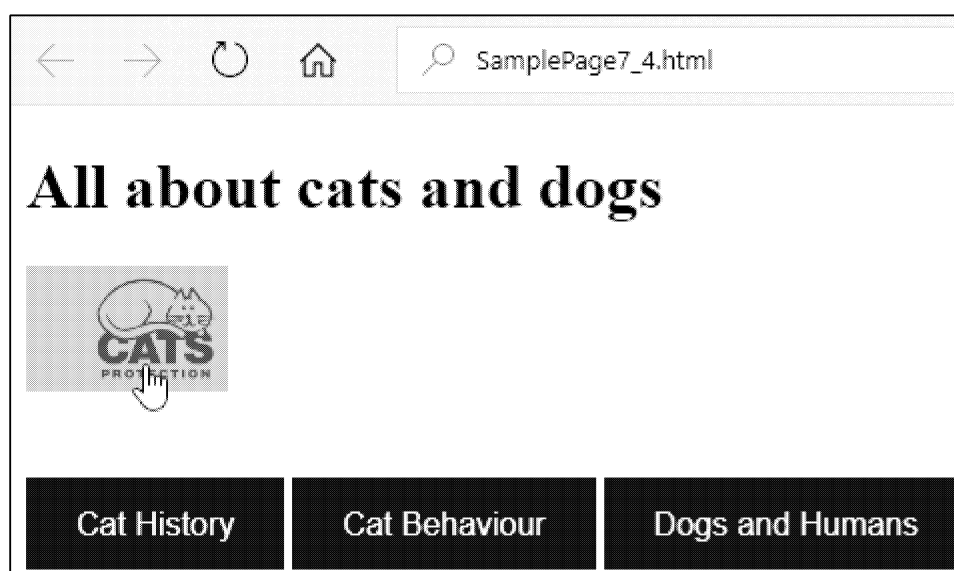
Quick Question 7:4

Open your web browser and search for the Cats Protection website. How many images do you find on the main home page?

SamplePage7_4

```
<a href = "https://www.cats.org.uk/">
<img src = "CatsProtection.png" alt = "Cats Protection logo" />
</a>
```

The image tag is placed between the opening and closing hyperlink tags:



Exercise 7:4 Images as hyperlinks

In this exercise you will add four social media icons as image hyperlinks to the page using these generic addresses:

- LinkedIn <https://uk.linkedin.com>
- Instagram <https://www.instagram.com>
- Twitter <https://twitter.com>
- YouTube <https://www.youtube.com>

1. Open your text editor and open the file Ex7_3.html from the last exercise and save as **Ex7_4.html**
2. Make sure you have also copied across the four logo images from the 7_SamplePage7_4.html file
3. The images should appear next to each other in a line above the heading. For extra credit, the set of images should be left-aligned.
4. Make sure the images are a suitable size by checking other websites to see how they are displayed.
5. Each image should be linked to one of the URLs listed above.
6. Any extra CSS rules that you write must be in the internal CSS stylesheet.
7. Save your work and check it works in your browser.

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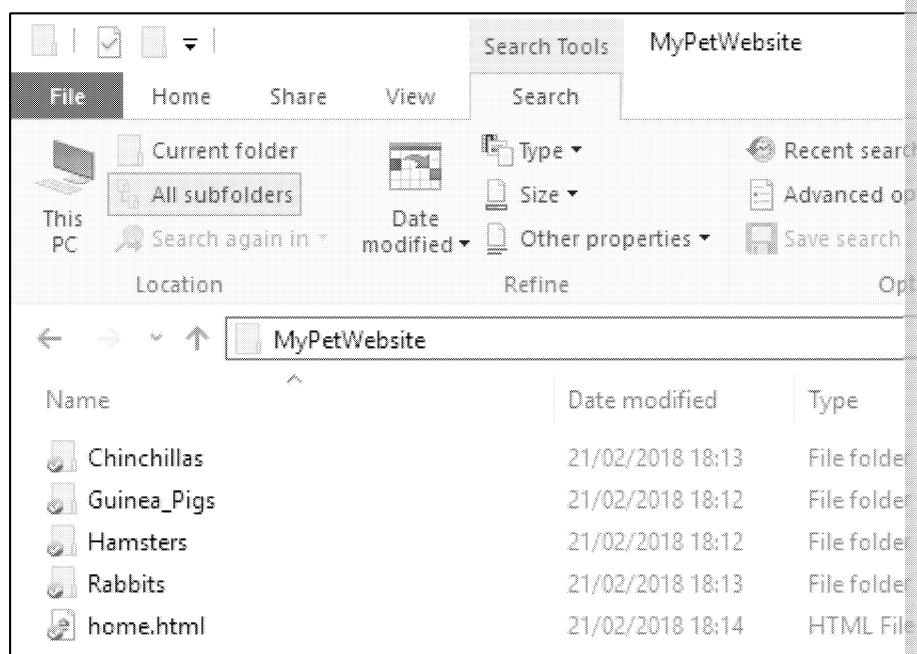


Review Questions 7

1. Identify the correct code for an internal hyperlink to a page called more_dogs.html.
 - More Dogs <a>
 - More Dogs
 - More Dogs
2. A hyperlink has four states; two are called 'hover' and 'active'. What are the other two?

.....

.....
3. Tori has created a website about her pets; she has guinea pigs, rabbits, hamsters and chinchillas. She has stored each page and the images about the different pets into folders.



Tori has tried to create a link from her page 'home.html' to her page on chinchillas but the link is not working. Identify what needs to be altered to make the link work.

```
<a href = "chinchillas.html"> Chinchillas </a>
```

.....

.....



.....

.....

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Check Your Progress

Hyperlinks		
Understand how to identify a hyperlink on a web page		
Understand that hyperlinks can be text or images		
Know that CSS style rules can be used to change the appearance of any text hyperlink		
Know that a hyperlink has four states		
Know that CSS style rules can be applied to each state separately or in pairs		
Understand the difference between a bookmark, an internal hyperlink and an external hyperlink		
Know how to use all three types of hyperlink		
Targets for Topic 8 1. 2. 3.		

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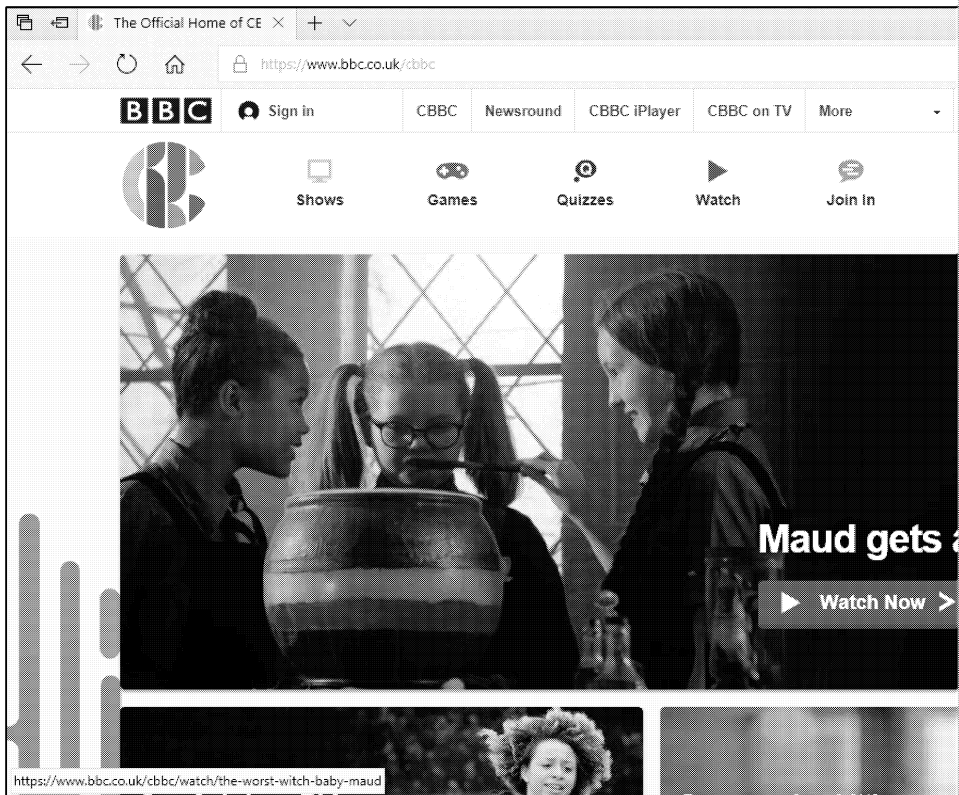


TOPIC 8: EXTERNAL STYLE SHEET

In Topic 4 we learnt that there are two types of style sheet, internal and external. We also learnt some basic CSS style rules and how to apply these to our web page by creating an external style sheet.

In this topic we look at **external** style sheets. An external style sheet is a link to a file that contains all the CSS rules to control the styles, fonts and colours on **every** page of a website.

The CBBC website uses external stylesheets.



The file for one of the style sheets used on the page is linked to using the code on

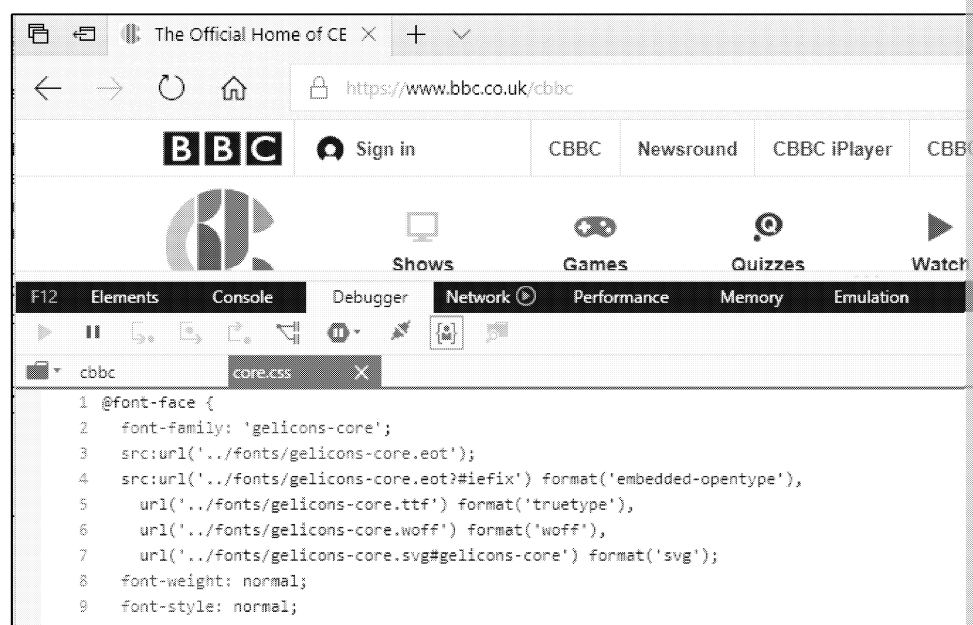


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You can click on the link to see the actual file with the style rules.



These are much more advanced than the simple CSS we have used, but you should be able to understand the basic style rules. Each page in the CBBC website will have a link to this file as each page will use the same style rules.

Why are external style sheets used?

- Styles only need to be written once this is essential for sites with a large number of pages.
- Changes to styles are easy; only the CSS file(s) need updating, and not the web pages.
- As long as each page uses the same style rules, each web page will look consistent.

SamplePage8_1

The **first stage** is to copy the rules INSIDE the <style> ... </style> tags but **not** the <style> ... </style> tags into a new text document. This must then be saved in the **same folder** as the web page.

For example, the file name might be 'Cats_stylesheet.css'.



Notice that the code for comments is different here:

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The **second stage** is to remove the internal style sheet from the web page.

```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Cats and Dogs</title>
5
6      </head>
7
8      <body>
9

```

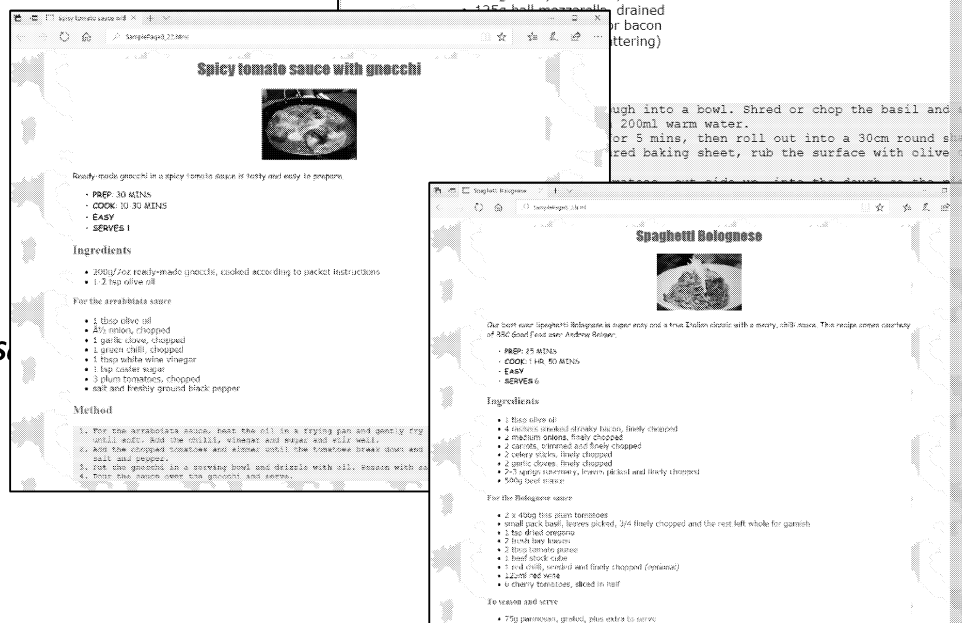
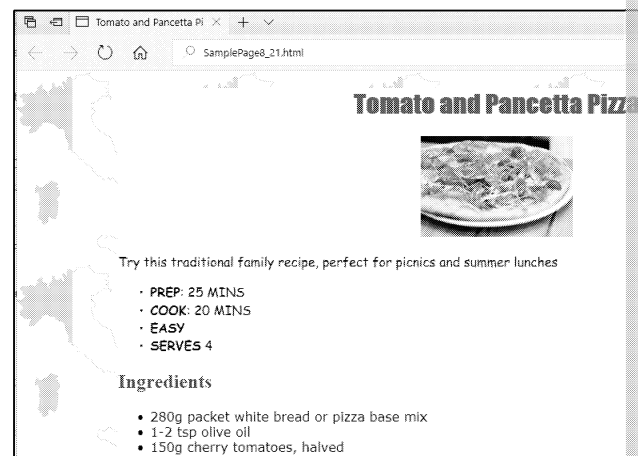
The **third stage** is to link the style sheet to the web page.

```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Cats and Dogs</title>
5
6          <link rel="stylesheet" type="text/css" href="Cats and Dogs.css">
7
8      </head>
9

```

In this example the same style sheet has been applied to each page in this simple website by linking to the same style sheet.



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Although the content on each page varies (they are different recipes), the styling is consistent across all pages because they all link to and use the external CSS in the same way.

Exercise 8:1 Link the website pages and apply the CSS style sheet

In this task you will create a new 'home' page for the Italian Recipe website. You will apply the CSS rules on the style sheet and link all pages together using hyperlinks.

1. Copy the following files to your area from the **8_StudentExercise** Resource folder:
 - a. spaghetti.html
 - b. pizza.html
 - c. gnocchi.html
 - d. ItalianFood.css
 - e. all images in the images folder
2. Open your text editor and open the file PageTemplate.html file from the **8_StudentExercise** Resource folder. Save it as **Ex8_1.html**.
3. The title for this page will be 'Delicious Italian Recipes'.
 - a. Find a suitable image or images to appear below your header.
 - b. Explain next that the website contains easy but delicious recipes.
 - c. Research three interesting facts about Italian cooking or ingredients. Add suitable subheadings to introduce each fact.
 - d. Link the **ItalianFood.css** style sheet to your page.
 - e. Preview, and check it all works as expected.
4. You now have four web pages that need to be linked together with hyperlinks.
 - a. Check each page displays correctly and make any improvements.
 - b. Each page must have four text hyperlinks to each of the web pages. Make sure these go but they should be easy to see.
 - c. Add suitable style rules to the ItalianFood.css style sheet so that the links are easy to see. *Hint: see Exercises 7_2 and 7_3.*
5. For extra credit:
 - a. Add a text-only hyperlink to the BBC Good Food page for more pasta recipes: <https://www.bbcgoodfood.com/recipes/collection/pasta>
 - b. Add social media image hyperlinks; you can use the images in the Resource folder.

Exercise 8:2 Final assessment



So far you have used examples and edited web pages which have mostly been provided for you. In this final exercise you have the chance to demonstrate what you can do. Use the information and examples available in this booklet.

1. You must create your own mini-website with a minimum of three pages.
2. The topic for your website is up to you, but make sure it is suitable by design for the intended audience.
3. The scores for your final project are listed in the table on the next page.
4. Read the table to see what your own website must have to gain the highest score.

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YOUR WEBSITE

	 [0–4]	 [5–7]
HTML structure	Each page must have a title in the <head> ... </head> section of the page. All content must be inside the opening and closing <body> tags. Your pages must have at least one heading (h1–h6) and one paragraph using the correct tags.	In addition, each page must use the correct doctype at the top of the page and use at least four block-level elements, e.g. h1–h6, paragraph tags.
CSS style rules	Each page must have at least one CSS style rule in an internal style sheet.	Each page must have at least one CSS style rule to change the appearance of either h1–h6 or paragraph tags. In addition, each page should have at least one class selector style rule applied to an HTML element in the page. The CSS can be written in an internal style sheet.
Hyperlinks	Each page in the website must have at least one working text hyperlink to link the pages together.	Each page in the website must have working hyperlinks to every other page. The hyperlinks must use CSS styles OR use an image hyperlink.

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Images	The website must have at least two images which relate to the page content. The size of each image should be suitable for the page and use ALT text to explain what the picture shows.	The website must have at least three images which all have suitable ALT text. In addition, the image size should be controlled either by using an in-line style (see SamplePage4_1) rule OR by adding a style rule to the internal style sheet.	The website must have at least one image on each page (minimum four images), each with suitable ALT text. The image size must be controlled by a suitable style rule added to the external style sheet. This can be applied either to the HTML tag OR as a class selector rule.	
Social media	At least one page in the website should have a social media icon image. This may or may not be correctly hyperlinked.	The website must have at least three social media links which appear on every page. Each icon image will be correctly hyperlinked to the social media main page. The images should be the same size on each page, controlled by a CSS style rule.	The website must have a minimum of four correctly hyperlinked social media icons, appearing on the same position on each page. The social media icons should be displayed in a block and the size controlled by CSS style rules in the external style sheet.	
Fonts	The website will use the standard default fonts available.	The website must have at least one CSS style rule to change the font-family for at least one block-level element, either h1–h6 or paragraph tags. This must be added to the internal style sheet.	The website will use at least three rules to control the font-family for at least two heading styles (h1–h6) and the paragraph tag. These can be applied to the HTML tag OR as a class selector and must be written in the external style sheet.	
Colours	At least one colour will be used in the website to change a font or block-level element or background.	The website will use at least three colours in a font, paragraph, background, heading or div tag. The rules must be added to the internal style sheet.	The website will use a minimum of four colours in a font, paragraph, background, heading or div tag. The rules must be added to the external style sheet.	
Layout	The website will not use any CSS style rules to control the width of the body content.	The website will use at least one <div> tag to split up the page content on each page. In addition, the website will contain at least one ordered OR unordered list.	The website will use at least two <div> tags to control layout on each page. In addition, a CSS style rule, in the external style sheet, will control the width of the page content.	
Comments	The website will have at least one comment to explain the use of colour OR a style rule.	The website should have at least one comment on each page to explain colours OR style rules being used.	The website should include at least one comment in the external style sheet and two comments on each page to explain colours OR style rules being used.	

Topic 1: Basic structure of a web page

Quick question

The web browser will read the code which created the web page to display the page. This is CSS. It could also include JavaScript, Python, PHP, C, C++ and many others.

Exercise 1:1 Find the tags

1.

Tag	Line Numbers
a. <head>	3
b. </script>	5, 32, 44, 50, 62
c. <html...>	2
d. <body...>	65
e. <!--... -->	17, 23, 49, 52, 55, 57, 63
f. </title>	24
g. <meta ... name="description">	26
h. <link...>	27, 28, 29, 30, 46, 47, 53, 56

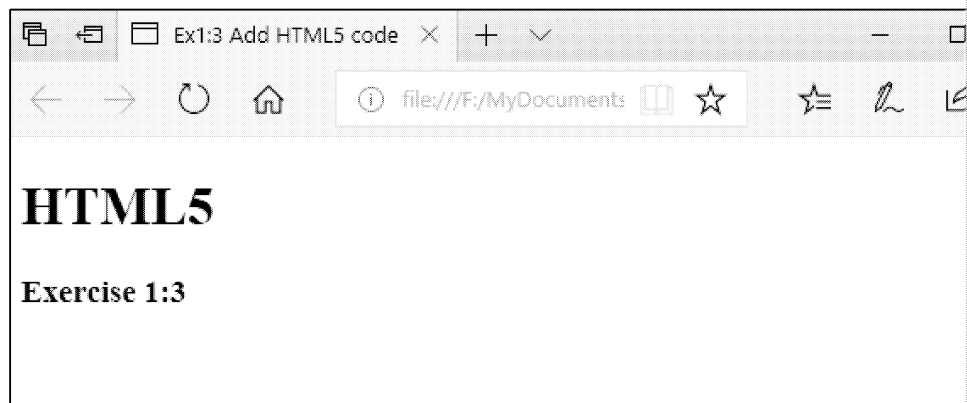
2. Options (c) and (f) are in a matched pair, whereas option (g) has no closing tag (with

Exercise 1:2 Create your first web page

See file **Exercise1_2.html** in Example Solutions folder. Should look like a blank page when

Exercise 1:3 Add a title and headings

See file **Exercise1_3.html** in Example Solutions folder. Should look like this when viewed i



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Review questions 1

1. To view web pages and websites
2. </p>
3. The doctype tag for the HTML version used on the page
4. Yes, so that the web browser can then display the page correctly.



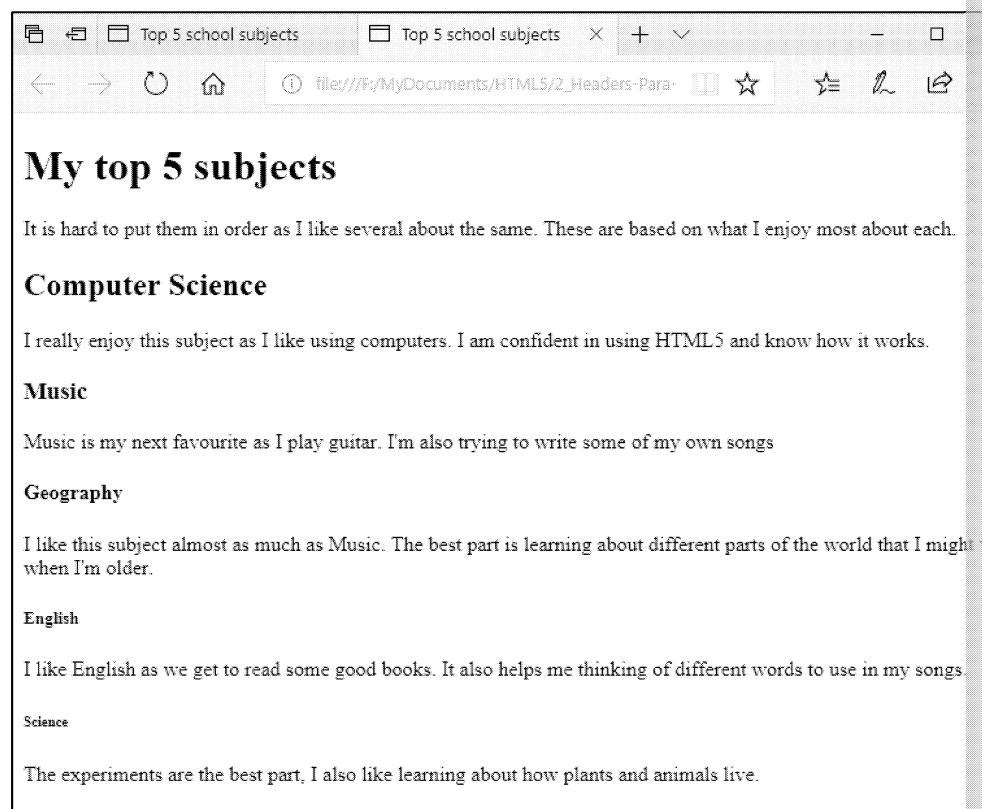
Topic 2: Headings, paragraphs and comments

Quick question

The description used in the meta tags is used by the search engine to display a summary of the page (Student should find their own example(s)).

Exercise 2:1 Headings and paragraphs

See file **Exercise2_1.html** in Example Solutions folder. Should look like this when viewed in a browser:



Exercise 2:2 Find the comment code

The comments start on Line 30 and finish on Line 35. The comment code looks like this:

```

30      <!-- HTML5 Shim and Respond.js IE8 support of HTML5 elements and
31      <!-- WARNING: Respond.js doesn't work if you view the page via
32      <!--[if lt IE 9]>
33          <script src="https://oss.maxcdn.com/libs/html5shiv/3.7.0/html5shiv.js"></script>
34          <script src="https://oss.maxcdn.com/libs/respond.js/1.4.2/respond.min.js"></script>
35      <![endif]-->

```

```
<!-- This is a comment-->
```

Exercise 2:3 Comment your code

See file **Exercise2_3.html** in Example Solutions folder. Students should have comments in the `<title> ... </title>` tags in the head section. Solution gives example of what might be said.

Review questions 2

1. False. The contents of the `<title> ... </title>` tag appear on the title bar of the browser window.
2. There will always be a line space before and after a block-level tag.
3. `<!-- comment-->`

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Topic 3: Formatting text, block-level elements and background

Exercise 3:1 Experimenting with hexadecimal colours

See file **Exercise3_1.html** in [Example Solutions](#) folder. Students can choose whichever hex

Exercise 3:2 Blocks and backgrounds

See file **Exercise3_2.html** in [Example Solutions](#) folder. Should look like this when viewed in

Spaghetti Bolognese

PREP: 25 MINS COOK: 1 HR, 50 MINS EASY SERVES 6 Our best ever spaghetti Bolognese is super easy and a true Italian classic with a meaty, chilli sauce. This recipe comes courtesy of BBC Good Food user Andrew Balmer.

Ingredients

1 tbsp olive oil 4 rashers smoked streaky bacon, finely chopped 2 medium onions, finely chopped 2 carrots, trimmed and finely chopped 2 celery sticks, finely chopped 2 garlic cloves, finely chopped 2-3 sprigs rosemary, leaves picked and finely chopped 500g beef mince

For the Bolognese sauce

2 x 400g tins plum tomatoes small pack basil, leaves picked, 3/4 finely chopped and the rest left whole for garnish 1 tsp dried oregano 2 fresh bay leaves 2 tomato puree 1 beef stock cube 1 red chilli, seeded and finely chopped (optional) 125ml red wine 6 cherry tomatoes, sliced in half

To season and serve

75g parmesan, grated, plus extra to serve 400g spaghetti crusty bread, to serve (optional)

Method

Put a large saucepan on a medium heat and add 1 tbsp olive oil. Add the bacon and fry for 10 mins until golden and crisp.

Reduce the heat and add the onion, carrot, celery, garlic and rosemary, then fry for 10 mins. Stir the veg often until it softens.

Increase the heat to medium-high, add the mince and cook stirring for 3-4 mins until the meat is browned all over.

Add the tinned tomatoes, chopped basil, oregano, bay leaves, tomato puree, stock cube, chilli, wine and cherry tomatoes. Stir with a wooden spoon, breaking up the plum tomatoes.

Bring to the boil, reduce to a gentle simmer and cover with a lid. Cook for 1 hr 15 mins stirring occasionally, until you have a rich, thick sauce. Add the Parmesan, check the seasoning and stir.

When the Bolognese is nearly finished cook the spaghetti following pack instructions. Drain the spaghetti and stir into the Bolognese sauce. Serve with grated Parmesan, the extra basil leaves and crusty bread.

Exercise 3:3 Formatting text

See file **Exercise3_3.html** in [Example Solutions](#) folder. Note that `` or `<i>` for italic and `<code>` for code. Should look like this when viewed in a web browser:

Spaghetti Bolognese

PREP: 25 MINS

COOK: 1 HR, 50 MINS

EASY

SERVES 6

Our best ever spaghetti Bolognese is super easy and a true Italian classic with a meaty, chilli sauce. This recipe comes courtesy of BBC Good Food user Andrew Balmer.

Ingredients

1 tbsp olive oil 4 rashers smoked streaky bacon, finely chopped 2 medium onions, finely chopped 2 carrots, trimmed and finely chopped 2 celery sticks, finely chopped 2 garlic cloves, finely chopped 2-3 sprigs rosemary, leaves picked and finely chopped 500g beef mince

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2 x 400g tins plum tomatoes small pack basil, leaves picked, 3/4 finely chopped and the rest left whole for garnish 1 tsp dried oregano 2 fresh bay leaves 2 tomato puree 1 beef stock cube 1 red chilli, seeded and finely chopped (optional) 125ml red wine 6 cherry tomatoes, sliced in half

To season and serve

75g parmesan, grated, plus extra to serve 400g spaghetti crusty bread, to serve (optional)

Review questions 3

- 0-9 and A-F
- style =
- `<h1 style = "color : red"> Code Red</h1>`
- `<h2 style="background-color:yellow">Yellow</h2>`

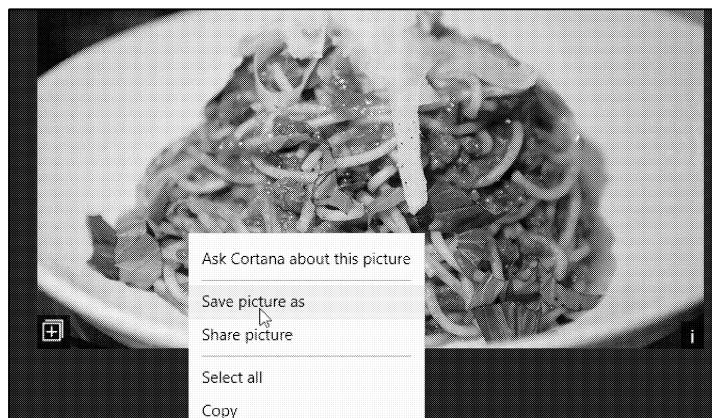
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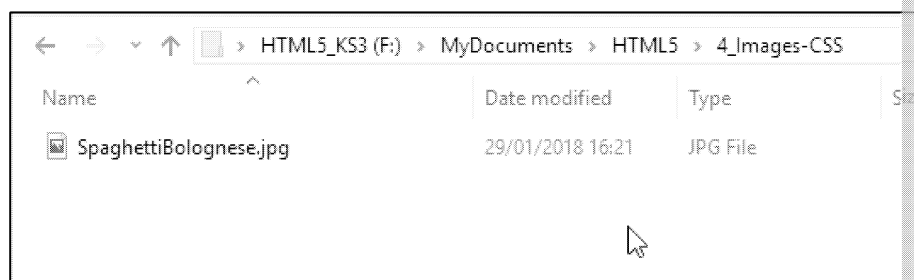
Topic 4: Images and simple CSS

Quick question 4:1

1. Click on the image to visit the web page. This will get the original rather than a thumb (lower quality).
2. Right-click on the image and choose 'Save picture as' or similar.



3. Navigate to your folder, enter a filename and click save.



Exercise 4:1 Inserting images

See file **Exercise4_1.html** in Example Solutions folder. The image can be anywhere inside

```
<img src ="SpaghettiBolognese.jpg" alt ="Dish of Spaghetti Bolognese" style= "b
```

Quick question 4:2

SamplePage4_1:

```
<body style ="background-color:blanchedalmond">
```

SamplePage4_2

```
<style>
body {
    background-color:blanchedalmond;}
</style>

</head>
```

When the style rule is written **INSIDE** the <style> ... </style> tags **INSIDE** the <head> ... </head>

1. The name of the tag that the rule applies to is stated first.
2. The rule is written inside curly braces.
3. No speech marks are used.
4. The rule MUST end with a semicolon (;).

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Exercise 4:2 Using internal CSS

See file **Exercise4_2.html** in Example Solutions folder. The web page should look the same

```

1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Spaghetti Bolognese</title>
5
6     <style>
7       h1{color:green;text-align:center;}
8     </style>
9
10  </head>
11
12  <body>
13
14    <h1>Spaghetti Bolognese</h1>
15

```

Exercise 4:3 Using class selectors

See file **Exercise4_3.html** in Example Solutions folder.

There should be three class selector style rules, similar to the ones shown below:

```

1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Spaghetti Bolognese</title>
5
6     <style>
7       h1{text-align:center;color:green;}
8       .Red {color:red}
9       .Green {color:green;}
10      .honeyD {background-color:honeydew}
11     </style>
12
13   </head>

```

The class selector should be applied to replace in-line style rules (inside the HTML tags).

```

28 <h2 class="Red">Ingredients</h2>
29
30 1 tbsp oil
31 4 rashers
32 2 medium
33 2 carrots
34 2 celery
35 2 garlic
36 2-3 sprig
37 500g beef
38
39 <h3 class="Green">Method</h3>
40
41 <p>2 x 40
42 small pa
43 1 tsp dri
44 2 fresh k
45 2 tbsp to
46 1 beef st
47 1 red chi
48 125ml rec
49 6 cherry
50
51 <h3 class="honeyD">Recipe</h3>
52
53 <p>75g pa
54 400g spa
55 crusty br
56
57 <h2 class="Green">Cooking</h2>
58
59 <p class="Green">Preparation</p>
60
61 <p>Reduce
62
63 <p class="Green">Cooking</p>
64
65 <p>Add th
66 breaking
67
68 <p class="Green">Serving</p>
69

```

Review questions 4

1. ``
2. People using a screen reader know that the page has a picture and what it is about.
3. To create the page structure and determine where headings and paragraphs appear.
4. Inside the `<head> ... </head>` tags of the page

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Topic 5: Using div tags on a web page

Exercise 5:1 Create a page container and apply a CSS style

See file **Exercise5_1.html** in [Example Solutions](#) folder.

Quick question

Using the page width as a percentage (%) means that the size of the central 'container' div is relative to the page size (within certain parameters – additional CSS would be needed to make the layout work). Using a set value means that the information inside the 'container' div does not change size. Setting the width in pixels makes the width **absolute**, meaning it cannot change. Setting the 'container' width to 80% means it will, within certain limits, expand or contract to be 80% of the overall page width.

Exercise 5:2 Nesting one div inside another

See file **Exercise5_2.html** in [Example Solutions](#) folder.

```

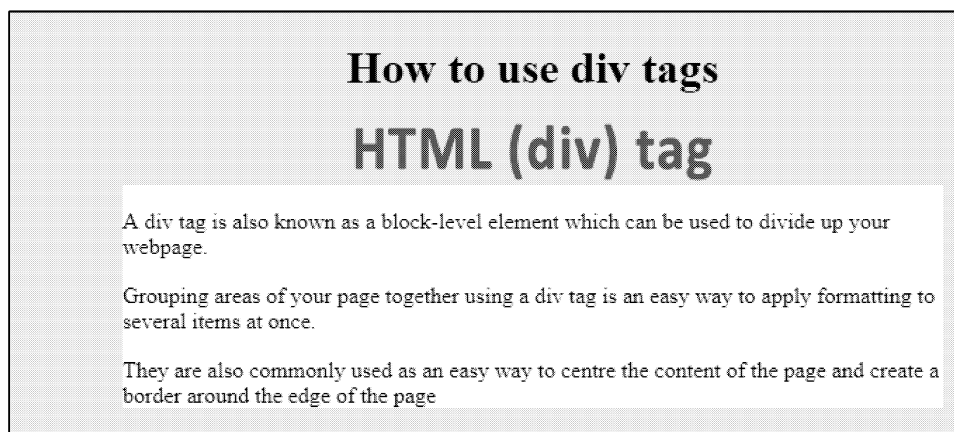
16      .header{
17          background-color:lightgray;
18          text-align:center;
19      }
20  </style>
21
22  </head>
23
24  <body>
25  <div class = "container"> <!--container div to centre the page content-->
26
27  <div class = "header"> <!--header-->
28  <h1>How to use div tags</h1>
29  <img src = "div_tag.png" alt = "HTML <div> tag">
30  </div> <!--end of header-->

```

The page now looks like this:

Exercise 5:3 Background images

See file **Exercise5_3.html** in [Example Solutions](#) folder. Should look like this when viewed in a browser:



Exercise 5:4 Putting it all together

See file **Exercise5_4.html** in [Example Solutions](#) folder.

This is quite a tricky exercise and not all students may be completely successful. The first step is to create a main block with three blocks inside.

- Container div to surround ALL content inside the body tags
 - Header div to surround the content from the 'Spaghetti Bolognese' heading down to the subheading 'Ingredients'
 - The next block, which I called 'map', surrounds the 'Ingredients' section down to but not including the 'Method' subheading
 - The third block covers all of the text below the 'Method' subheading

See diagrams on next page

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Spaghetti Bolognese

PREP: 25 MINS

COOK: 1 HR, 50 MINS

EASY

SERVES 6



Our best ever spaghetti Bolognese is super easy and a true Italian classic with a meaty, chilli sauce. This recipe comes courtesy of BBC Good Food user Andrew Palmer.

Ingredients

1 tbsp olive oil 4 rashers smoked streaky bacon, finely chopped 2 medium onions, finely chopped 2 carrots, trimmed and finely chopped 2 celery sticks, finely chopped 2 garlic cloves, finely chopped 2-3 sprigs rosemary, leaves picked and finely chopped 500g beef mince

For the Bolognese sauce

2 x 400g tins plum tomatoes small pack basil, leaves picked, 3/4 finely chopped and the rest left whole for garnish 1 tsp dried oregano 2 fresh bay leaves 2 tsp tomato puree 1 beef stock cube 1 red chilli, seeded and finely chopped (optional) 125ml red wine 6 cherry tomatoes, sliced in half

To season and serve

75g parmesan, grated, plus extra to serve 400g spaghetti crusty bread, to serve (optional)

Method

Put a large saucepan on a medium heat and add 1 tbsp olive oil. Add the bacon and fry for 10 mins until golden and crisp.

Reduce the heat and add the onion, carrot, celery, garlic and rosemary, then fry for 10 mins. Stir the veg often until it softens.

Increase the heat to medium-high, add the mince and cook stirring for 3-4 mins until the meat is browned all over.

Add the tinned tomatoes, chopped basil, oregano, bay leaves, tomato puree, stock cube, chilli, wine and cherry tomatoes. Stir with a wooden spoon, breaking up the plum tomatoes.

Bring to the boil, reduce to a gentle simmer and cover with a lid. Cook for 1 hr 15 mins stirring occasionally, until you have a rich, thick sauce. Add the Parmesan, check the seasoning and stir.

When the Bolognese is nearly finished cook the spaghetti following pack instructions. Drain the spaghetti and stir into the Bolognese sauce. Serve with grated Parmesan, the extra basil leaves and crusty bread.

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```
6 <style>
7   .container{
8     background-color:white;
9     width:80%;
10    margin:0 auto; <!-- this will centre the con
11    }
12   .header{
13     text-align:center;
14     background-color:honeydew;}
15   .Red {
16     color:red}
17   .Green {
18     color:green;}
19   h1{
20     color:green;}
21   .method{
22     background-color:#ffcccc;}
23   .map{
24     background-image:url(map_Italy.png);
25     background-size: 80% 80% ;
26     background-repeat: no-repeat;
27     background-position:center;
28     height:200px;
29   }
30
31 </style>
```

Review questions 5

1. Any heading tag h1 to h6 or a paragraph tag.
2.
 - a. Class selector cannot start with a number
 - b. Incorrect brackets used – should be curly braces
 - c. 'centre' should be the American spelling, 'center'
 - d. There should be a semicolon before the closing bracket

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Topic 6: Ordered and unordered lists

Exercise 6:1 Ordered and unordered lists

See file **Exercise6_1.html** in Example Solutions folder.

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>HTML Lists</title>
5
6     <style>
7       h1{
8         color:crimson;
9         text-align:center;}
10
11      h2{
12        color: navy;
13        font-family: sanserif,Arial;}
14
15      .container{
16        background-color:white;
17        width:80%;
18        margin: 0 auto;}
19      body{
20        background-color:LightBlue;}
21      .centre{
22        text-align:center;}
23      img{
24        height:50%;
25        width:50%;
26      }
27      p,ol,ul{font-family: monospace, Courier New;}<!--You can combine tags in
28
29    </style>
30  </head>
31
32  <body>
33    <div class = "container">
34
35      <h1>Ordered and unordered lists</h1>
36      <div class = "centre">
37        <img src = "PostNotes.jpg" alt = "image of post-it notes">
38      </div> <!--closes the centre div-->
39
40      <p>A list is a block-level element. Each type of list has opening and closing
41        type of list to display. The separate list items then have their own indiv
```

Two div elements have also been used, one called 'container' to control the width of the body content on the web

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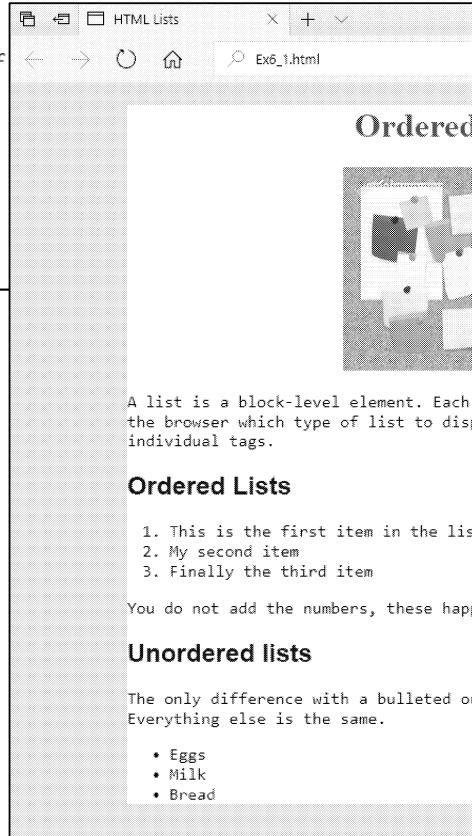
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```

43 |
44 | <h2>Ordered Lists</h2>
45 |
46 | <ol>
47 |   <li>This is the first item in the list </li>
48 |   <li>My second item</li>
49 |   <li>Finally the third item</li>
50 |
51 | </ol>
52 |
53 | <p>You do not add the numbers, these happen because you have specified that the list
54 |
55 | <h2>Unordered lists</h2>
56 | <p>The only difference with a bulleted or
57 |
58 | <ul>
59 |   <li>Eggs </li>
60 |   <li>Milk</li>
61 |   <li>Bread</li>
62 | </ul>
63 |
64 | </div>
65 | </body>
66 | </html>

```



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```
Ex5_4.html x
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Spaghetti Bolognese</title>
5
6     <style>
7       .container{
8         background-color:white;
9         width:80%;
10        margin:0 auto; <!-- this will centre the
11        }
12      .header{
13        text-align:center;
14        background-color:honeydew;}
15      .Red {
16        color:red}
17      .Green {
18        color:green;}
19      h1{
20        color:green;}
21      .method{
22        background-color:#ffeccc;}
23      .map{
24        background-image:url (map_Italy.png) ;
25        background-size: 80% 80% ;
26        background-repeat: no-repeat;
27        background-position:center;
28        height:200px;
29      }
30
31    </style>
```

Removed in Ex6_2.html

Added in Ex6_2.html

```
Ex6_2.html x
1 <!DOCTYPE
2 <html>
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
```

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Exercise 6:2 Improving your code

See file **Exercise6_2.html** in Example Solutions folder.

The screenshot shows a web browser window with the title "Spaghetti Bolognese" and a search bar containing "Ex6_2.html". The page content includes a recipe for Spaghetti Bolognese. Annotations are made on the page:

- Section 5**: An arrow points to the "Ingredients" section header.
- Section 2**: A bracket groups the ingredients list.
- Section 3**: A bracket groups the "For the Bolognese sauce" and "To season and serve" sections.

Spaghetti Bolognese

Our best ever Spaghetti Bolognese is super easy and a true Italian classic with a meaty, chilli sauce. This recipe comes courtesy of BBC Good Food user Andrew Balmer.

PREP: 25 MINS
COOK: 1 HR, 50 MINS
EASY
SERVES 6

Ingredients

- 1 tbsp olive oil
- 4 rashers smoked streaky bacon, finely chopped
- 2 medium onions, finely chopped
- 2 carrots, trimmed and finely chopped
- 2 celery sticks, finely chopped
- 2 garlic cloves, finely chopped
- 2-3 sprigs rosemary, leaves picked and finely chopped
- 500g beef mince

For the Bolognese sauce

- 2 x 400g tins plum tomatoes
- small pack basil, leaves picked, 3/4 finely chopped and the rest left whole for garnish
- 1 tsp dried oregano
- 2 fresh bay leaves
- 2 tbsp tomato puree
- 1 beef stock cube
- 1 red chilli, seeded and finely chopped (optional)
- 125ml red wine
- 6 cherry tomatoes, sliced in half

To season and serve

- 75g parmesan, grated, plus extra to serve
- 400g spaghetti crusty bread, to serve (optional)

Method

- Put a large saucepan on a medium heat and add 1 tbsp olive oil. Add the bacon and fry for 10 mins until golden and crisp.
- Reduce the heat and add the onion, carrot, celery, garlic and rosemary, then fry for 10 mins. Stir the veg often until it softens.
- Increase the heat to medium-high, add the mince and cook stirring for 3-4 mins until the meat is browned all over.
- Add the tinned tomatoes, chopped basil, oregano, bay leaves, tomato puree, stock cube, chilli, wine and cherry tomatoes. Stir well.
- Bring to the boil, reduce to a gentle simmer and cover with a lid. Cook for 1 hr 15 mins stirring occasionally, until you have a thick sauce.
- When the Bolognese is nearly finished cook the spaghetti following pack instructions. Drain the spaghetti and stir into the Bolognese. Serve with parmesan and crusty bread.

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Section 1

```

43 <body>
44 <div class = "container"> <!--container start-->
45 <div class = "header"> <!--header start-->
46 <h1>Spaghetti Bolognese</h1>
47
48
49 <img src ="6_SolutionImages/SpaghettiBolognese.jpg"
50 alt ="Dish of Spaghetti Bolognese" style= "height:20%;width:20%;" >
51
52 </div> <!-- header ends -->
53 <p class = "intro">Our best ever Spaghetti Bolognese is super easy and a true Ital
54 with a meaty, chilli sauce. This recipe comes courtesy of BBC Good Food user Andre
55
56 <ul class = "intro">
57 <li><b>PREP</b>: 25 MINS</li>
58 <li><b>COOK</b>: 1 HR, 50 MINS</li>
59 <li><strong>EASY</strong> </li>
60 <li><strong>SERVES</strong> 6</li>
61 </ul>

```

Section 2

```

65 <ul class ="bulletList">
66
67 <li>1 tbsp olive oil</li>
68 <li>4 rashers smoked streaky bacon, finely chopped</li>
69 <li>2 medium onions, finely chopped</li>
70 <li>2 carrots, trimmed and finely chopped</li>
71 <li>2 celery sticks, finely chopped</li>
72 <li>2 garlic cloves, finely chopped</li>
73 <li>2-3 sprigs rosemary, leaves picked and finely cho
74 <li>500g beef mince</li>
75 </ul>

```

```

.bulletList{
font-family:

```

Section 3

```

78 <h3 class= "Green">For the Bolognese</h3>
79
80 <ul class ="bulletList">
81   <li>2 x 400g tins plum tomatoes</li>
82   <li>small pack basil, leaves picked, 3/4 finely chopped and the rest left whole</li>
83   <li>1 tsp dried oregano</li>
84   <li>2 fresh bay leaves</li>
85   <li>2 tbsp tomato puree</li>
86   <li>1 beef stock cube</li>
87   <li>1 red chilli, seeded and finely chopped <i>(optional)</i></li>
88   <li>125ml red wine</li>
89   <li>6 cherry tomatoes, sliced in half</li>
90
91 </ul>
92
93 <h3 class = "Red">To season and serve</h3>
94 <ul class ="bulletList">
95   <li>75g parmesan, grated, plus extra to serve </li>
96   <li>400g spaghetti crusty bread, to serve <em>(optional)</em></li>
97
98 </ul>

```

Section 4

```

100 <h2 class = "Green">Method</h2>
101 <div class = "method"> <!--method starts-->
102   <ol class = "numList">
103     <li>Put a large saucepan on a medium heat and add 1 tbsp olive oil. Add the onion and cook for 10 mins until golden and crisp.</li>
104
105     <li>Reduce the heat and add the onion, carrot, celery, garlic and rosemary, and cook for 10 mins. Stir the veg often until it softens.</li>
106
107     <li>Increase the heat to medium-high, add the mince and cook stirring for 3 mins until the meat is browned all over.</li>
108
109     <li>Add the tinned tomatoes, chopped basil, oregano, bay leaves, tomato puree, red chilli, wine and cherry tomatoes. Stir with a wooden spoon, breaking up the tomatoes.</li>
110
111     <li>Bring to the boil, reduce to a gentle simmer and cover with a lid. Cook for 15 mins, stirring occasionally, until you have a rich, thick sauce. Add the Parmesan, seasoning and stir.</li>
112
113     <li>When the Bolognese is nearly finished cook the spaghetti following pack instructions. Drain the spaghetti and stir into the Bolognese sauce. Serve with grated Parmesan, the spaghetti and crusty bread.</li>
114
115   </ol>
116 </div> <!--method ends-->
117
118 </div> <!-- container ends-->
119
120 </body>
121 </html>

```

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```

36      body{
37      background-image:url(6_SolutionImages/map_Italy.png);
38
39      }
40
41  }
42
43  <body>
44  <div class = "container"> <!--container start-->

```

```

6      <style>
7      .container{
8          background-color:white;
9          width:80%;
10         margin:0 auto; <!-- this will centre the contents on the page -->
11     }

```

This
'co
The
of
the
the

Review questions 6

- ```

 Bread
 Milk
 Eggs


```
- ```

ul { color: green; }

```
- Any from: h1 – h6, paragraph, div, ordered list, unordered list
- ```

<!--Header ends -->

```

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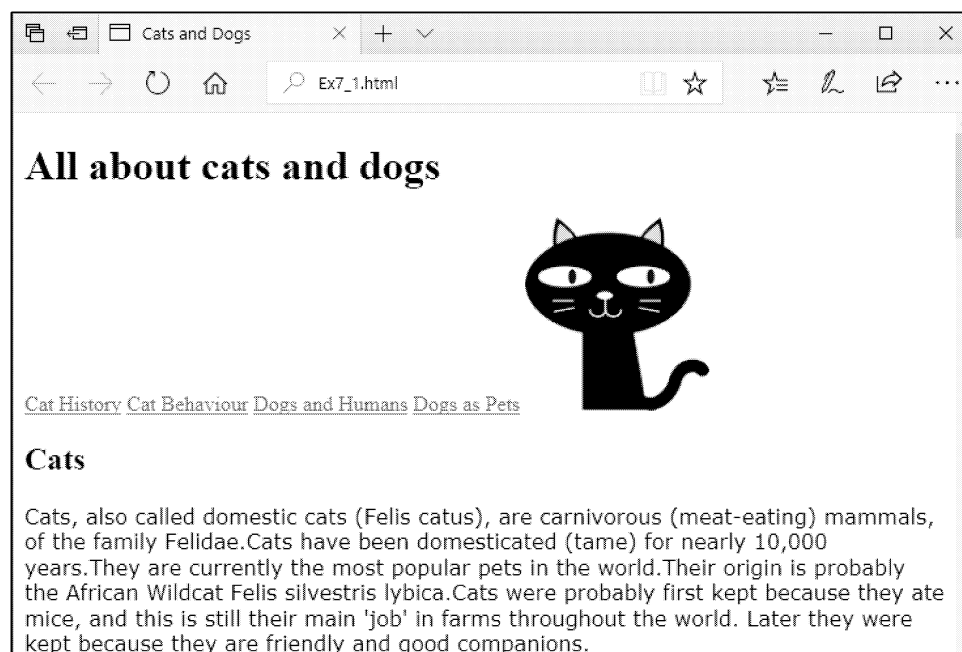


## Topic 7: Hyperlinks

### Exercise 7:1 Inserting bookmark links

See file **Exercise7\_1.html** in Example Solutions folder

The page should look like this:



The hyperlinks to the bookmarks at the top of the page in HTML:

|    |                                                                                              |
|----|----------------------------------------------------------------------------------------------|
| 17 | <code>&lt;body&gt;</code>                                                                    |
| 18 | <code>&lt;h1&gt;All about cats and dogs&lt;/h1&gt;</code>                                    |
| 19 | <code>&lt;a href = "#Cat_History"&gt; Cat History&lt;/a&gt;</code>                           |
| 20 | <code>&lt;a href = "#Cat_Behaviour"&gt; Cat Behaviour&lt;/a&gt;</code>                       |
| 21 | <code>&lt;a href = "#Dogs_humans"&gt; Dogs and Humans&lt;/a&gt;</code>                       |
| 22 | <code>&lt;a href = "#Dogs_Pets"&gt; Dogs as Pets&lt;/a&gt;</code>                            |
| 23 |                                                                                              |
| 24 | <code>&lt;img src = "7_Solutions_images/cat.png" alt="A black cat illustration."/&gt;</code> |
| 30 | <code>&lt;h2 id = "Cat_History"&gt;History&lt;/h2&gt;</code>                                 |
| 33 | <code>&lt;h2 id = "Cat_Behaviour"&gt;Behaviour&lt;/h2&gt;</code>                             |
| 41 | <code>&lt;h2 id = "Dogs_humans"&gt;Roles&lt;/h2&gt;</code>                                   |
| 45 | <code>&lt;h2 id = "Dogs_Pets"&gt;As pets&lt;/h2&gt;</code>                                   |

The bookmarks are applied to each subheading.

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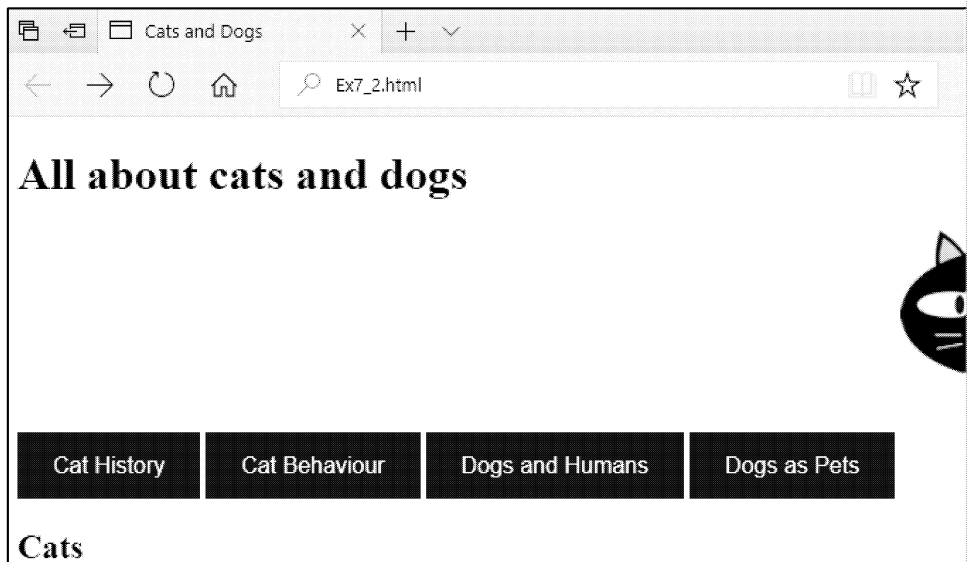




## Exercise 7:2 Styling bookmarks with CSS

In this exercise students will choose their own CSS rules to change so their styling of the h

An example is shown below (see file **Ex7\_2.html** in Example Solutions folder)



```
a:link, a:visited {
 background-color: Navy;
 font-family:sans serif,Arial;
 color: white;
 padding: 14px 25px;
 text-align: center;
 text-decoration: none;
 display: inline-block;
}
a:hover, a:active {
 background-color: LightBlue;
 color:Navy;
}
```

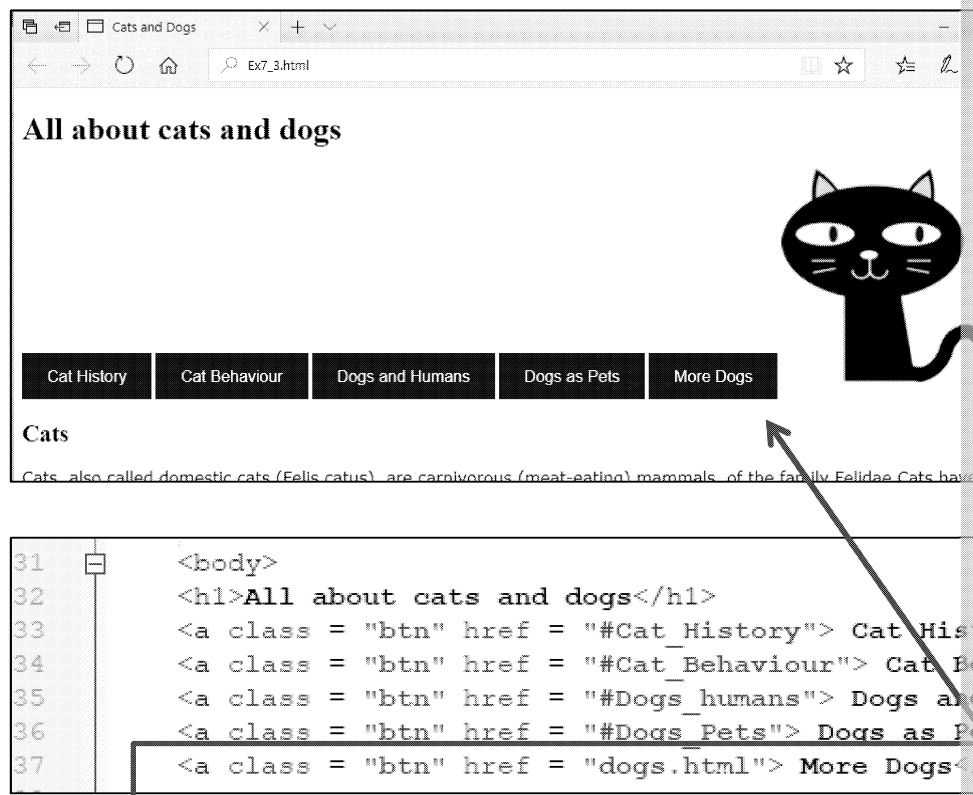
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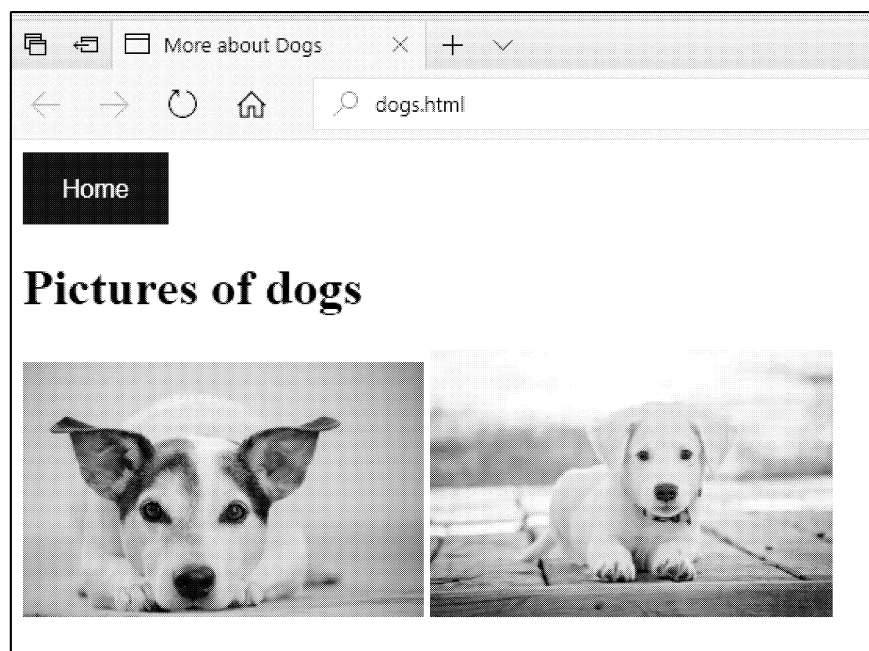


## Exercise 7:3 Hyperlinks to other pages and websites

Hyperlink added to go to dogs.html page is shown below (see file **Ex7\_3.html** in Example S



Dogs.html page in browser:



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```

1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>More about Dogs</title>
5 <style>
6 img{width:25%;
7 height:25%;}
8 </style>
9
10 a:link, a:visited {
11 background-color: Navy;
12 font-family:sans serif,Arial;
13 color: white;
14 padding: 14px 25px;
15 text-align: center;
16 text-decoration: none;
17 display: inline-block;
18 }
19 a:hover, a:active {
20 background-color: LightBlue;
21 color:Navy;
22 }
23 </style>
24 </head>
25
26 <body>
27 Home
28
29 <h1>Pictures of dogs</h1>
30
31
32
33 </body>
34 </html>

```

Style rule images

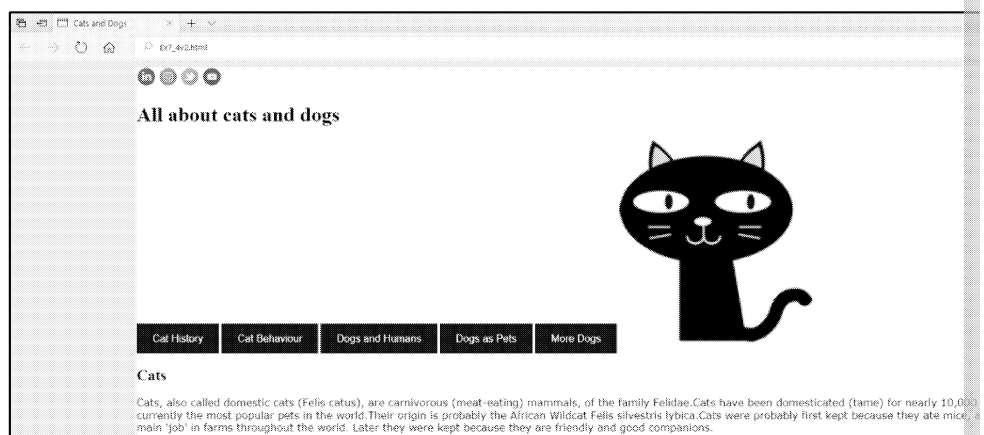
Code to the 'home' link

## Quick question 7.4

There are approximately 26 image hyperlinks, if you do not count the drop-down menu. The day you visit the website.

## Exercise 7:4 Images as hyperlinks

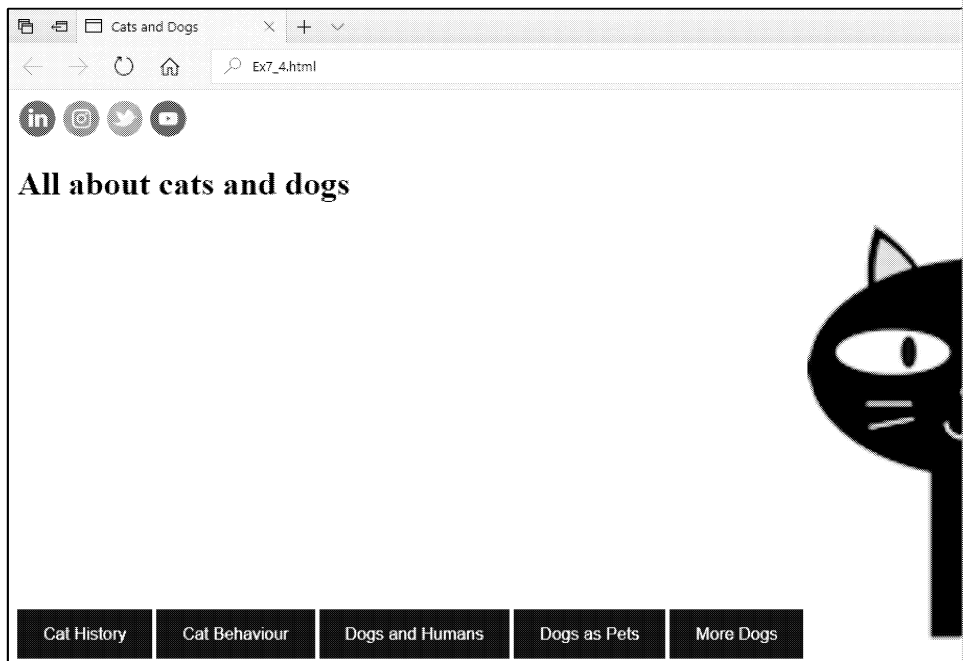
See file **Exercise7\_4.html** in Example Solutions folder. The hyperlinks are shown at the top of the page.



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An alternative version using a container div:



A style rule called 'icons' has been used to control the height and width of the social media icons. This rule controls the height and width of any content starting with `<img>`.

|    |  |                          |
|----|--|--------------------------|
| 10 |  | <code>img{</code>        |
| 11 |  | <code>height:20%;</code> |
| 12 |  | <code>width:20%;}</code> |

The 'icons' class selector is then applied to the `<div> ... </div>` that surrounds the four images. This controls the size of the icon images and displays them all in one line in a block.

|    |  |                                                                                                                                                |
|----|--|------------------------------------------------------------------------------------------------------------------------------------------------|
| 27 |  | <code>.icons{</code>                                                                                                                           |
| 28 |  | <code>height:10%;</code>                                                                                                                       |
| 29 |  | <code>width:10%;</code>                                                                                                                        |
| 30 |  | <code>display: inline-block;</code>                                                                                                            |
| 31 |  | <code>}</code>                                                                                                                                 |
| 32 |  |                                                                                                                                                |
| 33 |  | <code>&lt;/style&gt;</code>                                                                                                                    |
| 34 |  |                                                                                                                                                |
| 35 |  | <code>&lt;/head&gt;</code>                                                                                                                     |
| 36 |  |                                                                                                                                                |
| 37 |  | <code>&lt;body&gt;</code>                                                                                                                      |
| 38 |  | <code>&lt;div class = "icons"&gt; &lt;!-- social media--&gt;</code>                                                                            |
| 39 |  | <code>&lt;a href = "https://uk.linkedin.com"&gt;&lt;img src = "7_Solutions_images/uk.linkedin.com.png" alt = "LinkedIn icon" /&gt;</code>      |
| 40 |  | <code>&lt;a href = "https://www.instagram.com"&gt;&lt;img src = "7_Solutions_images/www.instagram.com.png" alt = "Instagram icon" /&gt;</code> |
| 41 |  | <code>&lt;a href = "https://twitter.com"&gt;&lt;img src = "7_Solutions_images/twitter.com.png" alt = "Twitter icon" /&gt;</code>               |
| 42 |  | <code>&lt;a href = "https://www.youtube.com"&gt;&lt;img src = "7_Solutions_images/www.youtube.com.png" alt = "YouTube icon" /&gt;</code>       |
| 43 |  | <code>&lt;/div&gt; &lt;!-- end of social media--&gt;</code>                                                                                    |
| 44 |  |                                                                                                                                                |

## Review questions 7

1. `<a href = "more_dogs.html"> More Dogs </a>`
2. Link and visited
3. The page is inside a folder. The hyperlink needs to show the correct file path:

```
 Chinchilla
```

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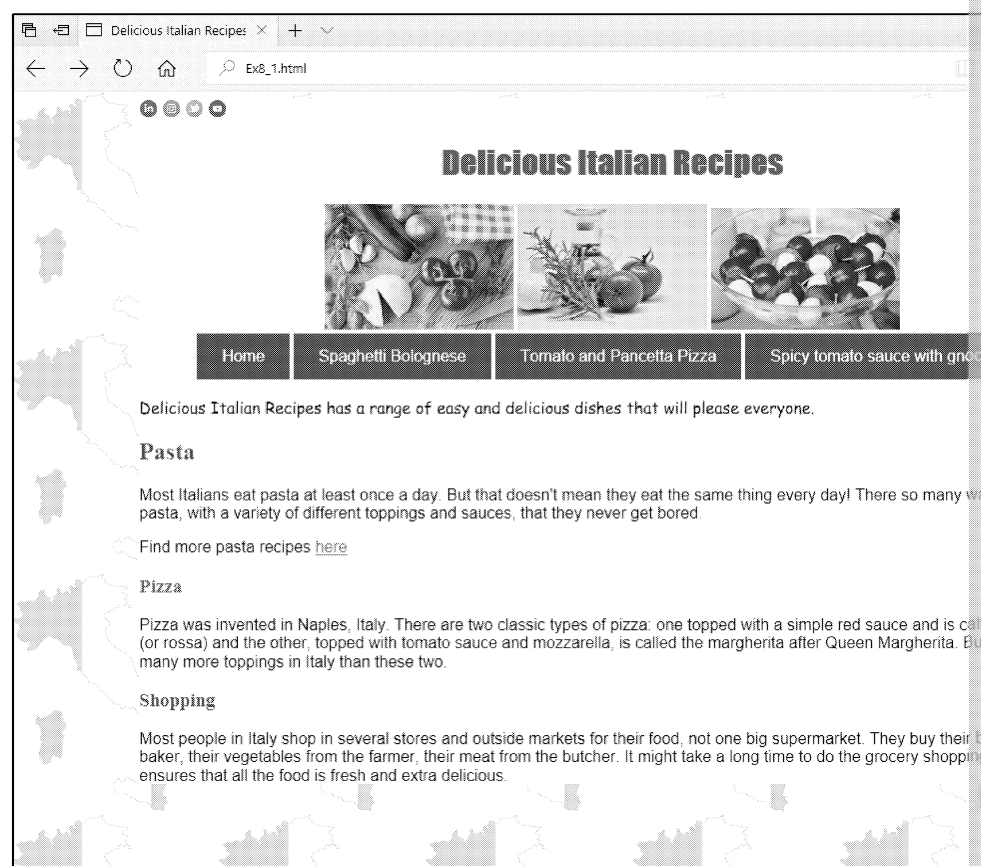


## Topic 8: External style sheets

### Exercise 8:1 Link the website pages and apply the CSS style sheet

See file **Exercise8\_1.html** in **Example Solutions** folder

#### Suggested solution:



The hyperlinks' CSS styles are the same as those seen in Exercise 7:3. If these are not changed, media hyperlinks will also have the same style.

```

28 <div> <!--start of hyperlinks -->
29 Home
30 Spaghetti Bolognese
31 Tomato and Pancetta Pizza
32 Spicy tomato sauce with gnocchi
33 </div><!-- end of hyperlinks-->
34
35 </div> <!-- header ends -->

```

This is inserted just before the 'header' div ends so that the hyperlinks are also centred on each page in the website.

The social media hyperlinks appear at the top of the page:

```

9 <body>
10 <div class = "container"> <!--container start-->
11
12 <div class = "icons"> <!-- social media-->
13
14
15
16
17 </div> <!-- end of social media-->
18
19 <div class = "header"> <!--header start-->

```

Make sure you have the correct file path for the social media images used in the hyperlinks.

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Each page in the website needs a link to the external CSS files.

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>Spicy tomato sauce with gnocchi</title>
5
6 <link rel = "stylesheet" type = "text/css" href = "Ital
7
8 </head>

```

The text hyperlink has been added to the Pasta paragraph.

Ensure that the file path is correct for the images at the top of each page.

```

<h1>Spicy tomato sauce with gnocchi</h1>
...
<img src ="images/Gnocchi.jpg"
alt ="Spicy tomato sauce with gnocchi" >

```

```

<h2 class= "Red">Pasta</h2>
<p>Most Italians eat pasta at least once a day. But that doesn't mean they eat
so many ways to eat pasta, with a variety of different toppings and sauces, the
<p>Find more pasta recipes <a href = "https://www.bbqgoodfood.com/recipes/colle

```

Additional CSS styles have been added to the original ItalianFood.css text file.

```

27 /* Additional CSS style rules added*/
28
29 img{height:20%;width:20%;
30 display: inline-block;}
31
32 p{font-family:Arial, sans-serif;}
33
34 a.btn:link, a.btn:visited {
35 background-color: crimson;
36 font-family:sans serif,Arial;
37 color: white;
38 padding: 14px 25px;
39 text-align: center;
40 text-decoration: none;
41 display: inline-block;
42 }
43
44 a.btn:hover, a.btn:active {
45 background-color: white;
46 color:crimson;
47 }
48
49 .icons{height:10%;width:10%;
50 display: inline-block;
51 }

```

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