

Implementing a Multi-page Website:

The Ring Of Gullion Website:

(To go to a Particular Section, put the mouse/cursor over the desired section heading in the Table of Contents, and then do Ctrl-mouseclick)

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There are YouTube videos that go through each part of these notes. Links are in Moodle.

Do NOT move onto the succeeding section if your webpage code does not give you the same browser view as the displayed screenshot. This is important! If you don't fix an early mistake, it's negative impact will likely be much greater as you work through this exercise.

Things YOU have to do are highlighted:

YELLOW text on PURPLE background

1: PART A: INTRODUCTION:

In this session you will create a multi-page website. A website is more than just a set of webpages with some sort of vague connection to each other. **Shared content** (text, images, video, sound), **structure** (HTML5 tags), **styles** (CSS), and **behaviour** (JavaScript) should give to each page the sense that they are coherently connected together. And, of course, each webpage should also have **distinctive** code and content.

It is of the utmost importance that you, the web designer, think deeply about what content, structure, style and behaviour are **common** across all webpages in the website, and what content, structure, style and behaviour is **unique** to each webpage.

Your task is to produce a website promoting the Ring of Gullion, a unique landscape just 5 miles north of Dundalk. The three webpages should look like this when finished:





The RING of GULLION

[Home](#)
[History](#)
[Culture](#)

History

The history of the Ring of Gullion begins about 450 million years ago when the Newry granite was emplaced. It extends from the valley in the Ring of Gullion to Ballynahinch in the middle of County Down. Some 390 million years later, the giant landmass Pangaea (which included the Americas, Eurasia and Africa) began to split up. A big gash cracked this landmass, stretching from east of northern Greenland and Norway down to Tierra del Fuego and Cape Town. Billions of litres of lava flowed out. Some formed the Giant's Causeway, giant lavafields that flowed like water. Other eruptions were more explosive, such as Slemish in County Antrim, or The Cooley Mountains, or Slieve Gullion, or the Ring of Gullion.



Near Forkill are the remains of a pyroclastic explosion, when lava bombs rain down. Would you fancy being hit by a 300 degree boulder? I thought not.

The main mountain, Slieve Gullion (the mountain of Cualann the blacksmith), was erupted after the Ring. The centre of the mountain was a huge vent, spewing lava both upwards and sideways into the surrounding rock, where it cooled to form the Ring of Gullion. The cooled lava in the vent is the most resistant of all of the rocks, causing Slieve Gullion to be the highest mountain in this area. It is the highest mountain in County Armagh. You can see about 15 counties from the top, from Antrim over to Fermanagh and down to Wicklow. The top is saucer-like: there are two peaks, separated by a lake, which has plenty of mythology associated with it.

The Ring itself is like a circle, with the centre at Slieve Gullion, and a radius of 5 miles. There is a forest on Gullion's eastern slopes, which has a nice coffee shop and playground, plus marked walking circuits. There is also a long road around the southern and western slopes of Gullion, which allows climbing access from the west, at a car park, more than halfway up the slope. The walk itself is easy, plenty of paving.

The southern summit (the higher of the two) has a cairn. It is the highest monument in the UK (might also be the highest in Ireland, I'm not sure). There is a chamber inside the cairn which you can go into, very atmospheric. Highly recommended. Years ago, during the Troubles, the cacophonous drone of helicopters taking off from and landing at Bessbrook Army Base was a real buzzkill. Many of the mountains in the Ring had Army bases on top, thankfully gone now. Some foundations of the Army base on Camlough Mountain can still be seen.

Come and see for yourself!

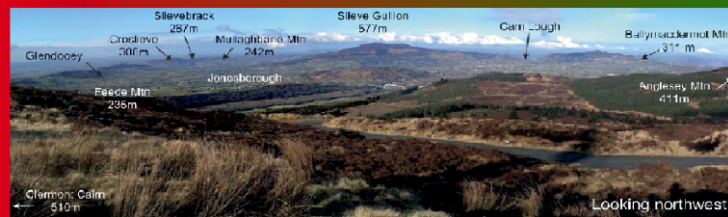
— Cú Chulainn

Main Peaks

- Slieve Gullion: 573m.
- Clermont (Black Mountain): 508m.
- Camlough Mountain: 423m.
- Croslieve: 308m.
- Burrin: 294m.
- Sugarloaf Hill (Sturgan Mountain): 265m.
- Tievecrom: 263m.
- Fathom Mountain: 247m.
- Mullaghbane Mountain: 242m.

Interesting Locations

- Cam Lough.
- Ballymacdermott Court Tomb.
- Camlough Mountain summit.
- The Crooked Road, Lislea.
- Ballykeel Dolmen.
- Cashel Lough Upper picnic site.
- Walking up the Glendesha Road from Dungooly.



The RING of GULLION

[Home](#)
[History](#)
[Culture](#)

Culture

The Ring of Gullion has produced many storytellers down through the years, most notably Michael Murphy, John Campbell and Mickey Quinn. It is also famous for its Gaelic poets. Being 'walled-off' from the rest of Ireland meant that Irish lasted longer here than in other parts of eastern Ireland. Between 1650 and 1800, the best Irish poetry was being written in North Louth and the Ring of Gullion. This was when Irish poetry became modern, as it had to adapt to the end of patronage by the Gaelic lords O'Neills, O'Hanlons and McGuinnesses. Now, poems were composed celebrating and commiserating with the lives, loves and hates of the ordinary people. These poems and songs are still sung around the world anywhere Gaelic singers congregate.



About two hundred and fifty years ago, a man called Johnson of the Fews terrorised the local people. He had a vicious sidekick Cormac the Headcutter, whose name explains all. The locals had a saying "Jesus of Nazareth, King of the Jews, Save us from Johnson, King of the Fews".

There is a famous competition called The Bard of Armagh. The cottage of the original Bard of Armagh is in the Ring of Gullion.

Myths and legends abound. One concerns Fionn Mac Cumhail. Once, as a young man, he was on the summit of Slieve Gullion. The top was haunted by the Old Hag of Beara - the *Cailleach Béara*. She watched over the summit lake. Anyone who drank from the water was immediately turned into an old man and death came soon after. Anyway, Fionn decided to go for a swim. No sooner had he stripped off and plunged in than herself arrived and pronounced her fateful sentence. Fionn replied that he had not drunk any water, as he always swam with his mouth closed. "And surely some water went into your nose", she screeched triumphantly. "Whoever heard of anyone drinking with their nose". To this she had no answer. She left him young, but turned his hair grey and long so that he tripped over it constantly for the rest of his three hundred year life.

The first major poet from the area was Séamas Dall Mac Cuarta in 1647, just before Cromwell came. Blind from birth, the legend goes that he got lost as a wee baby and fell into a stream. He was rescued by a fairy who gave him the gift of poetry. However, such a story is attributed to many blind creative persons, such as Turlach O'Carolan, so it is probably apocryphal.

During Penal Law times, the local Catholic population were not allowed worship in churches or houses. Usually a local large rock was the site for weekly mass. One such stone is Carrickinafrin, a mile west of Forkill. Another place is near the top of the Glendesh Road, in the forest. About 200m inside this spooky landscape of silence broken by creaking trees, is a large stone, which now has a crucifix on top.

One of the most successful singing clubs in Ireland in the eighties was The Stray Leaf Folk Club in a shed at the back of O'Hanlon's Bar in Mullaghbane. There you'd be, sitting on an empty beer keg, surrounded by the best unaccompanied singers in both Ireland and Britain, singing in English, Irish, Ulster-Scots and Scots-Gaelic.

You'll be impressed by the amount of signs written in Irish, and sessions in local pubs!

— Cú Chulainn

Famous Poets

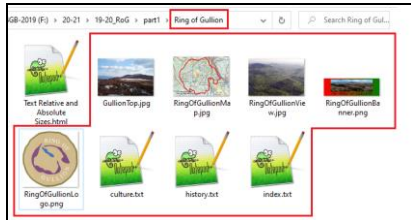
- ☞ Art Mac Bionaid
- ☞ Séamas Dall Mac Cuarta
- ☞ Art Mac Cumhaigh
- ☞ Peadar Mac Giolla Fhiondain
- ☞ Molai Nic Giolla Fhiondain
- ☞ Peadar Ó Doirmin

Cities & Villages

- ☞ Bessbrook
- ☞ Camlough
- ☞ Forkill
- ☞ Jonesborough
- ☞ Lislea
- ☞ Meigh
- ☞ Mullaghbane
- ☞ Newry

...2: FIRST STEPS:**GET ORGANISED!**

- ✚ Create a new folder called **RingOfGullion**.
- ✚ Download the Ring Of Gullion Resources, and copy them into the new folder, so it looks like this:



(The 8 files in red are the resources to be used in making your Ring of Gullion website; the **Text_Relative_And_Absolute_Size.html** file is just an example to be looked at later.)

RESOURCES:

- ✚ **Text content:**
 - 3 textfiles (**index.txt**, **history.txt** and **culture.txt**)
- ✚ *Example webpage: the **Text Relative and Absolute Sizes.html** webpage. (This won't be used to make the Ring of Gullion webpages.)*
- ✚ **Image content:** 5 images:
 - Each webpage has a **common banner image** (**RingOfGullionBanner.png**).
 - Each webpage has a **unique image** (**RingOfGullionView.jpg**, **RingOfGullionMap.jpg**, **GullionTop.jpg**).
 - The fifth image (**RingOfGullionLogo.png**) will be used:
 - to create a **background image** outside the centered content;
 - as **bullet-points for unordered lists** in all three webpages;
 - to create a **favicon** (the small image appearing in the tab for the webpages);
 - to act as a **separator** between parts of the address at the bottom of the website.

STYLE ORGANISATION:

- ✚ The **common** content needs to be styled in a **common** css file.
- ✚ The **unique** content, **for each webpage**, needs to be styled separately.
- ✚ ➔ As we have **three** webpages, we will need **four** css stylesheets.
- ✚ These stylesheets will be stored in a folder called **CSS**.
- ✚ Create this **css** subfolder in **RingOfGullion**.


IMAGE ORGANISATION:


 Create a subfolder in **RingOfGullion**, called **Images**.

 Move the 5 images into this folder.

PART B: 3: ANALYSING COMMON CONTENT:

We could just create 3 webpages straightaway from the three textfiles, but let's be a bit *smarter*: if we know what is **common** and what is **unique** content, then we can create the first webpage, tag the content, and **only then** create the other two webpages as *copies* of this first webpage. That will just leave us the task of tagging the unique content.

 Look inside the three textfiles: you should see some common content across all three, and content unique to each webpage.

 Look at the screenshots of the three webpages in pages 2-4 of this document. What is common and unique content, structure and styles?

 Make sure you know what content is **common** and what content is **unique**.

Common content, structure and styles:

- The content at the top and bottom, and the links;
- Banner logo;
- Logo for the Ring of Gullion used as background-image, bullet points, separating the parts of the address, and as a favicon (on the title tab);
- Address text;
- Page width and centering;
- Width of the smaller headings;
- Indentation of the headings;
- Width allocated to smaller images;
- Links box;
- Line separators between major sections.


Unique features:


- Content;
- Background colour for the headings.
- Background colour of central area, where the unique text is;
- Smaller picture.

...4: TAGGING *index.html* CONTENT:

Create ***index.html*** inside the **RingOfGullion** folder. Use the HTML5 template to get the basic tags.

(All the code you need is displayed 2 pages down)


 Insert a **`<div id="wrapper">`** tag inside the **`<body>`** tag. This is to allow our webpage structure to be **centered**.

 Copy the **contents** of ***index.txt***, and paste it **between the opening and closing** of this **`div`** tag.


 Apply tags to your content:

- The first line of the copied text is for the **`<title>`**, which goes in the **`<head>`** tag, NOT the **`<body>`** tag.
- Regarding the rest, **you will need to apply tags:**
 - **`<header>`** tag;
 - **`<nav>`** tag, with **`<a>`** tags inside;
 - **`<main>`** tag;
 - **`<article>`** tag;
 - 2 **`<section>`** tags;
 - **`<h2>`** tag;
 - 2 **`<h3>`** tags;
 - many **`<p>`** tags;
 - 2 **``** tags;
 - many **``** tags;
 - **`<address>`** tag inside **`<footer>`** tag.

When you have these applied correctly, the webpage should look like this {correct code (**`<head>`** code not included) on page after} (screenshot from Chrome):

The Ring Of Gullion banner image
[Home](#) [History](#) [Culture](#)

Welcome

Map of the Ring of Gullion Welcome to the Ring of Gullion website. It is only 5 miles north of Dundalk: the most varied landscape in Ireland. Awesomely steep hills honeycombed with the twistiest roads in Ireland are only a 90-minute walk from DkIT. Look north to see these formidable mountains that stopped the Normans in their tracks and kept Ulster the most Gaelic part of Ireland 400 years longer than the rest of the island.

Why is the Ring of Gullion so magical? Where do I start: it is the stubborn remains of a **volcano**: not just a straightforward vent (which Slieve Gullion is), but the outer circular ring of hills are a **ring-dyke**. As the magma was forcing its way upwards, it cracked the surrounding rocks. This circular crack filled with magma which cooled about 60 million years ago. It formed a hard granite which the ice wasn't able to erode, so the granitic Ring of Gullion sits proudly above its circular valley. The pressure from the ice (when Ireland was covered by ice about 10 thousand years ago) eroded gaps in the Ring, so we have roads and rail through these gaps at the Carrickdale Hotel, Moyry Castle (the Gap of the North), Cloghogue, Camlough, and Forkill, to name a few.

Today, landscapes like the Ring of Gullion are being formed in volcanically-active zones such as Iceland, Hawaii, the Western Rockies, Mexico stretching all the way down the Andes, and across the far side of the Pacific to New Zealand, the Philippines, Japan and Alaska. Geologists from all over the world come to study this special landscape right on our doorstep.

When you travel from Louth into the Ring of Gullion, you immediately notice that you are surrounded by mountains. Your horizon shrinks to about 5 miles. But if you take the trouble to travel up any of the hilly roads that exit the Ring, the views are fantastic. Each hill in the Ring has its own characteristic shape: gentle heather-clad Cashel Mountain or the Mount-Fuji-like conical peak of Sturgan Mountain or the bare stark hemisphere of Mullaghbane Mountain. Because the Ring is so small, these mountains change their profile as you travel. You will not be bored!

We all hope to see you soon, footering around the Ring of Gullion.

— Cú Chulainn

Hours

- The Ring of Gullion: never closes!
- Slieve Gullion: also never closes, but the road around it closes around nightfall.

Directions

- From the North (Belfast): Take the M1 West, then take the A1 South, bypass Newry travelling towards Dublin. When you are at Cloghogue church, you have entered the Ring.
- From the South (Dundalk): travel North to either Forkill or the Carrickdale Hotel. When you get there, you have entered the Ring of Gullion.
- From the East (Carlingford): go to Omeath. Take the road up to the transmitter at Clermont Carn. As you climb, you are entering the ring of Gullion.
- From the West (Castleblayney): Head to Crossmaglen, then Silverbridge, then on the B30 to Newry. When you get to Cashel Lakes, you are entering the ring of Gullion.

*Setanta, * c/o Culainn the Blacksmith, * The Forge, * The Lake at the Top, * Slieve Gullion, * County Armagh, * Ireland*

The tiny “broken image” symbols at the top-left of this screenshot and just underneath “Welcome” mean that the browser can’t find the image, and is just showing the value of the **alt** property/attribute.

The HTML code for the webpage:

```

20 <body>
21   <div id="wrapper">
22     <header>
23       
24     </header>
25
26     <nav>
27       <a href="index.html">Home</a>
28       <a href="history.html">History</a>
29       <a href="culture.html">Culture</a>
30     </nav>
31
32     <main>
33       <article>
34         <section id="section1">
35           <h2>
36             Welcome
37           </h2>
38
39           <p>
40             
41             Welcome to the Ring of Gullion website. It is only 5 miles north of Dundalk: the most varied landscape in Ireland. Awesomely steep hills honeycombed with the
42             twistiest roads in Ireland are only a 90-minute walk from DkIT. Look north to see these formidable mountains that stopped the Normans in their tracks and kept
43             Ulster the most Gaelic part of Ireland 400 years longer than the rest of the island.
44           </p>
45
46           <p>
47             Why is the Ring of Gullion so magical? Where do I start: it is the stubborn remains of a <b>volcano</b>: not just a straightforward vent (which Slieve Gullion is),
48             but the outer circular ring of hills are a <b>ring-dyke</b>. As the magma was forcing its way upwards, it cracked the surrounding rocks. This circular crack filled
49             with magma which cooled about 60 million years ago. It formed a hard granite which the ice wasn't able to erode, so the granitic Ring of Gullion sits proudly above
50             its circular valley. The pressure from the ice (when Ireland was covered by ice about 10 thousand years ago) eroded gaps in the Ring, so we have roads and rail
51             through these gaps at the Carrickdale Hotel, Moyry Castle (the Gap of the North), Cloghogue, Camlough, and Forkill, to name a few.
52           </p>
53
54           <p>
55             Today, landscapes like the Ring of Gullion are being formed in volcanically-active zones such as Iceland, Hawaii, the Western Rockies, Mexico stretching all the
56             way down the Andes, and across the far side of the Pacific to New Zealand, the Philippines, Japan and Alaska. Geologists from all over the world come to study this
57             special landscape right on our doorstep.
58           </p>
59
60           <p>
61             When you travel from Louth into the Ring of Gullion, you immediately notice that you are surrounded by mountains. Your horizon shrinks to about 5 miles. But if you
62             take the trouble to travel up any of the hilly roads that exit the Ring, the views are fantastic. Each hill in the Ring has its own characteristic shape: gentle
63             heather-clad Cashel Mountain or the Mount-Fuji-like conical peak of Sturgan Mountain or the bare stark hemisphere of Mullaghbane Mountain. Because the Ring is so
64             small, these mountains change their profile as you travel. You will not be bored!
65           </p>
66
67           <p>
68             We all hope to see you soon, footering around the Ring of Gullion.
69           </p>
70
71           <p>
72             &mdash; C&uacute;lainn
73           </p>
74         </section>
75
76         <section id="section2">
77           <h3>
78             Hours
79           </h3>
80
81           <ul>
82             <li>The Ring of Gullion: never closes!</li>
83             <li>Slieve Gullion: also never closes, but the road around it closes around nightfall.</li>
84           </ul>
85
86           <h3>
87             Directions
88           </h3>
89
90           <ul>
91             <li>From the North (Belfast): Take the M1 West, then take the A1 South, bypass Newry travelling towards Dublin. When you are at Cloghogue church, you have entered
92             the Ring.</li>
93             <li>From the South (Dundalk): travel North to either Forkill or the Carrickdale Hotel. When you get there, you have entered the Ring of Gullion.</li>
94             <li>From the East (Carlingford): go to Omeath. Take the road up to the transmitter at Clermont Carn. As you climb, you are entering the ring of Gullion.</li>
95             <li>From the West (Castleblayney): Head to Crossmaglen, then Silverbridge, then on the B30 to Newry. When you get to Cashel Lakes, you are entering the ring of
96             Gullion.</li>
97           </ul>
98         </section>
99       </article>
100     </main>
101
102     <footer>
103       <address>
104         Setanta, &#9728;&#9728; c/o C&uacute;lainn the Blacksmith, &#9728;&#9728; The Forge, &#9728;&#9728; The Lake at the Top, &#9728;&#9728; Slieve Gullion,
105         &#9728;&#9728; County Armagh, &#9728;&#9728; Ireland
106       </address>
107     </footer>
108   </div>
109 </body>
110 </html>

```

PLEASE INDENT YOUR CODE: it makes it easier to read it.

No images? Let's sort that out.

...5: RELATIVE PATHNAMES (1): DOWN INTO A SUBFOLDER:

If you look at the 2 `` tags, the `src` value just refers to the image names. But remember these images are stored inside another folder called `images` (you were asked to do this at the bottom of section 2).


 Change the `src` value of both images so that it becomes `src="Images/..."`.

```
<body>
  <div id="wrapper">
    <header>
      

    <nav>
      <a href="index.html">Home</a>
      <a href="history.html">History</a>
      <a href="culture.html">Culture</a>
    </nav>

    <main>
      <article>
        <section id="section1">
          <h2>
            Welcome
          </h2>

          <p>
            <img src="images/RingOfGullionMap.jpg" alt="Map of
            Welcome to the Ring of Gullion website. It is only
```

 The images should become visible in the webpage on **refresh** (F5).

 **Make sure you have saved `index.html`.**


NOW THAT YOU HAVE COMMON CONTENT YOU CAN MAKE THE OTHER TWO WEBPAGES.

...6: TAGGING *history.html* and *culture.html* CONTENT:

 Save **index.html**.

 Now save this webpage as (save as) both **history.html** and **culture.html**.

- You should have realised that the **<header>**, **<nav>** and **<footer>** content is identical across all three webpages.
- You should also realise that the other two webpages also have **<article>**, 2 **<section>**, **<h2>**, 2 **<h3>**, **<p>**, ****, **** tags.

 Insert the unique content from **history.txt** into the appropriate places in **history.html**; tag it properly, and delete the wrong content that had been copied from **index.html**.

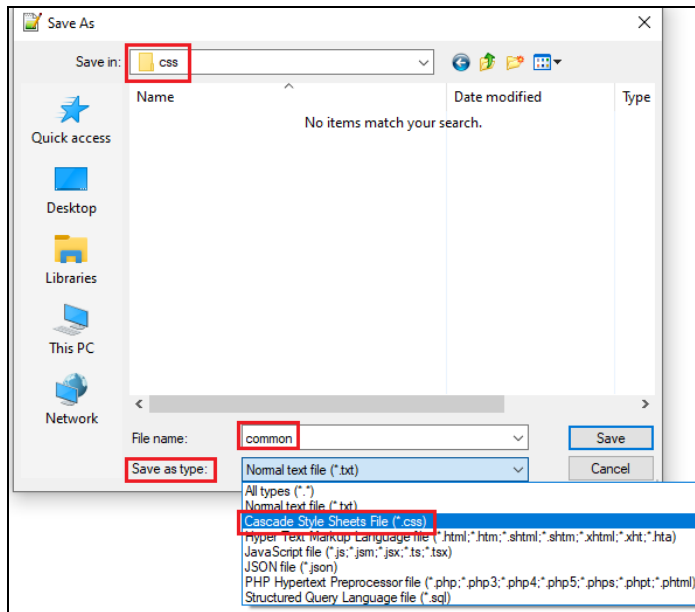
 Do the same process for **culture.html**.

7: PART C: APPLYING CSS 1: THE COMMON STYLESHEET:

You need to **create a stylesheet** that will apply styles to the common content and tags for each webpage.

You should already created a subfolder called **css** in Section 2. If not, do it now.

Create a stylesheet, save it into this **css** subfolder, and call it **common.css**.



Now you need to link this stylesheet to the webpages. Insert the following **<link>** line of code into all three webpages:

```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <meta charset="UTF-8" />
5
6          <title>
7              Ring of Gullion Home Page
8          </title>
9
10         <link href="css/common.css" rel="stylesheet" type="text/css" />
11     </head>
12
13     <body>

```


...8: COMMON STYLES:

Insert the following styles into **common.css**:

```
1  body {
2      font-family: Arial, Helvetica, sans-serif;
3      text-align: center;
4  }
5
6  #wrapper {
7      min-width: 600px;
8      max-width: 1000px;
9      text-align: left;
10     margin: auto;
11     background: #dddddd
12 }
13
14 header {
15     width: 100%;
16     text-align: center;
17     vertical-align: center
18 }
19
20 nav {
21     background-color: white;
22 }
23
24 article {
25 }
26
```


The **wrapper** width is set to 1000px, but the banner image is 1356px wide. You need to display the image fitting into 1000px, so add **width="1000"** into the banner image tag: ****. No need to scale the height as it will shrink while keeping its shape.

The webpages should now look like this, with webpage structure centered, and header image centered in both dimensions:

Ring of x | Ring of x | Ring of x | Ring of x +

File | F:/20-21/19-20_RoG/part1/RingOfGullion... Search Star Settings User Profile More


Apps G O ROS R YouTube RSS Dk



The RING of GULLION

[Home](#) [History](#) [Culture](#)

Welcome



Welcome to the Ring of Gullion website. It is only 5 miles north of Dundalk; the most varied landscape in Ireland. Awesomely steep hills honeycombed with the twistiest roads in Ireland are only a 90-minute walk from DkIT. Look north to see these formidable mountains that stopped the Normans in their tracks and kept Ulster the most Gaelic part of Ireland 400 years longer than the rest of the island.

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When you travel from Louth into the Ring of Gullion, you immediately notice that you are surrounded by mountains. Your horizon shrinks to about 5 miles. But if you take the trouble to travel up any of the hilly roads that exit the Ring, the views are fantastic. Each hill in the Ring has its own characteristic shape: gentle heather-clad Cashel Mountain or the Mount-Fuji-like conical peak of Sturgan Mountain or the bare stark hemisphere of Mullaghbane Mountain. Because the Ring is so small, these mountains change their profile as you travel. You will not be bored!

We all hope to see you soon, footering around the Ring of Gullion.

— Cú Chulainn

Hours

- The Ring of Gullion: never closes!
- Slieve Gullion: also never closes, but the road around it closes around nightfall.

Directions

- From the North (Belfast): Take the M1 West, then take the A1 South, bypass Newry travelling towards Dublin. When you are at Cloghogue church, you have entered the Ring.
- From the South (Dundalk): travel North to either Forkill or the Carrickdale Hotel. When you get there, you have entered the Ring of Gullion.
- From the East (Carlingford): go to Omearr. Take the road up to the transmitter at Clermont Carn. As you climb, you are entering the ring of Gullion.
- From the West (Castleblayney): Head to Crossmaglen, then Silverbridge, then on the B30 to Newry. When you get to Cashel Lakes, you are entering the ring of Gullion.

Selanta, c/o Cuilinn the Blacksmith, The Forge, The Lake at the Top, Slieve Gullion, County Armagh, Ireland

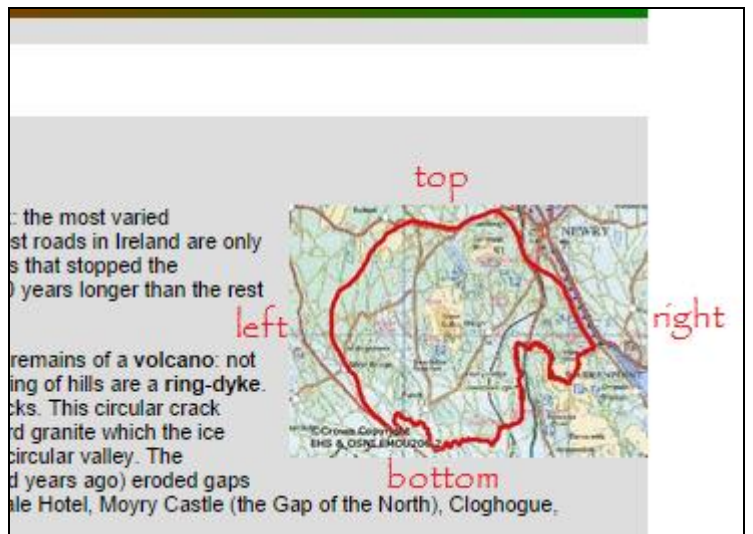
...9: FLOATING the IMAGE:

- ❖ The image with **id="gullionImage"** should be inside the first paragraph tag.
- ❖ We want to move the image over to the right (**float: right**) and let the text flow or **wrap** around it on its left.
- ❖ This will raise the issue of how close the text should be to the image: we don't want it too close as that would look odd. We need to set **margins** for the image, particularly the bottom and left margins. The margin is the space on the *outside* of something: the space between two things.



```
#gullionImage {
    float: right;
    margin: 0em 0em 1em 1em
}
```

- ✚ Add the following CSS code to **common.css**: The four values for **margin** go **clockwise** from top, so **top right bottom left**. ("em" will be explained in Section 11).



- ✚ The webpage now looks like this: Notice the right side of the image is right up to the edge of the container, and its top matches the top of the paragraph text.
- ✚ Experiment with these margin settings and verify that you can set individual sides. **Make sure your final margin values are as required in the screenshot above.**

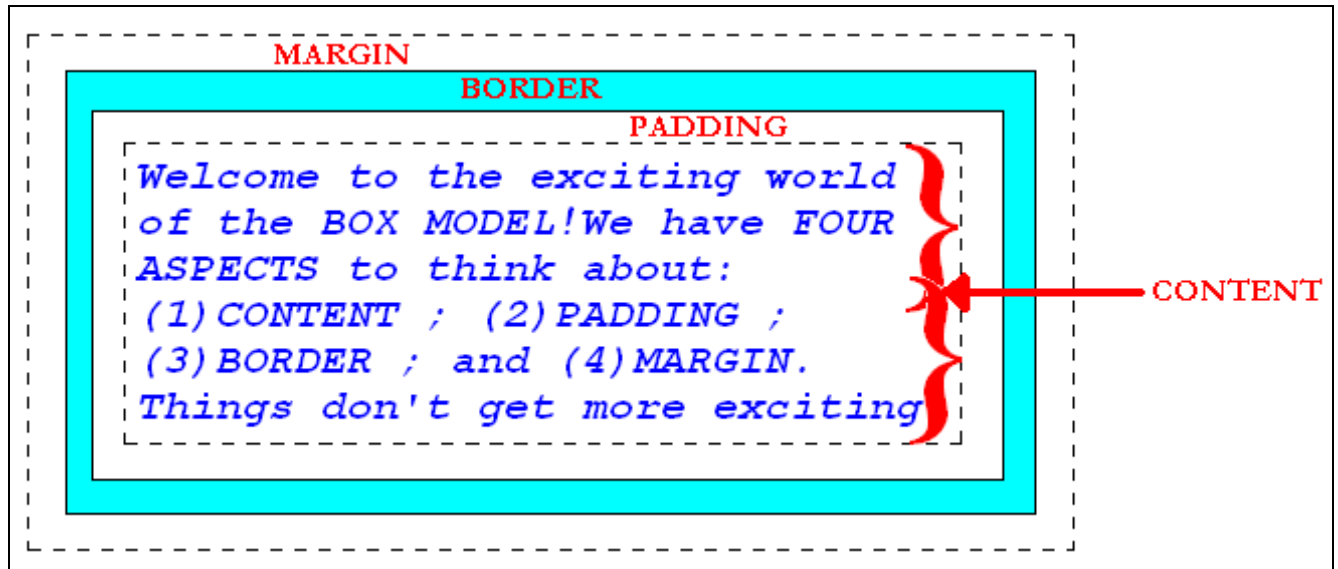
...10: INTRODUCTION TO THE BOX MODEL:

Applying styles to the sides of an image or paragraph or div are best understood using the **box model**. All tags are essentially rectangular or box-shaped.

Suppose we wanted to have a box with text in it. We can treat this box like an image in that we can float it and wrap text around it. But there are other issues involved. We have 4 things to think about:

- a. The **CONTENT**: text or image;
- b. The **PADDING**: the gap between the content and the box border;
- c. The **BORDER**: how thick, what colour, what style (solid/dotted/3D/shadow/etc.)
- d. The **MARGIN**: the gap between the border and the rest of the webpage.

The following image shows the situation:



We can have styles associated with margin, padding, border as follows:

```
border: 10px dotted red;  
border-left: 5px solid green;  
border-color: red green blue pink;  
margin-left: 5px;  
padding-right: 2px.
```

We will explore the box model in more detail later.

...11: RELATIVE FONT SIZE:

You may have noticed that the margins were in a strange unit: **em**. This is a relative unit of font size:

1em = 16px, ... BUT ...

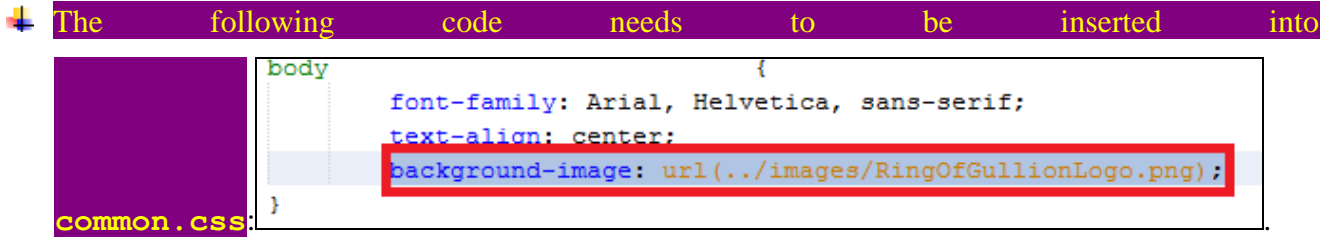
✚ If, say, a **<div>** has font at **2em**, and a **<p>** *inside* it has font at **2em**, then the **<p>** actually will have a font of **4em**.

- ❖ Have a look at **Text_Relative_and_Absolute_Sizes.html**.
- ❖ More information at: https://www.w3schools.com/css/css_font_size.asp.

The **max-width** of the **<div id="wrapper">** tag could be set as **63em** (=1000px/16).

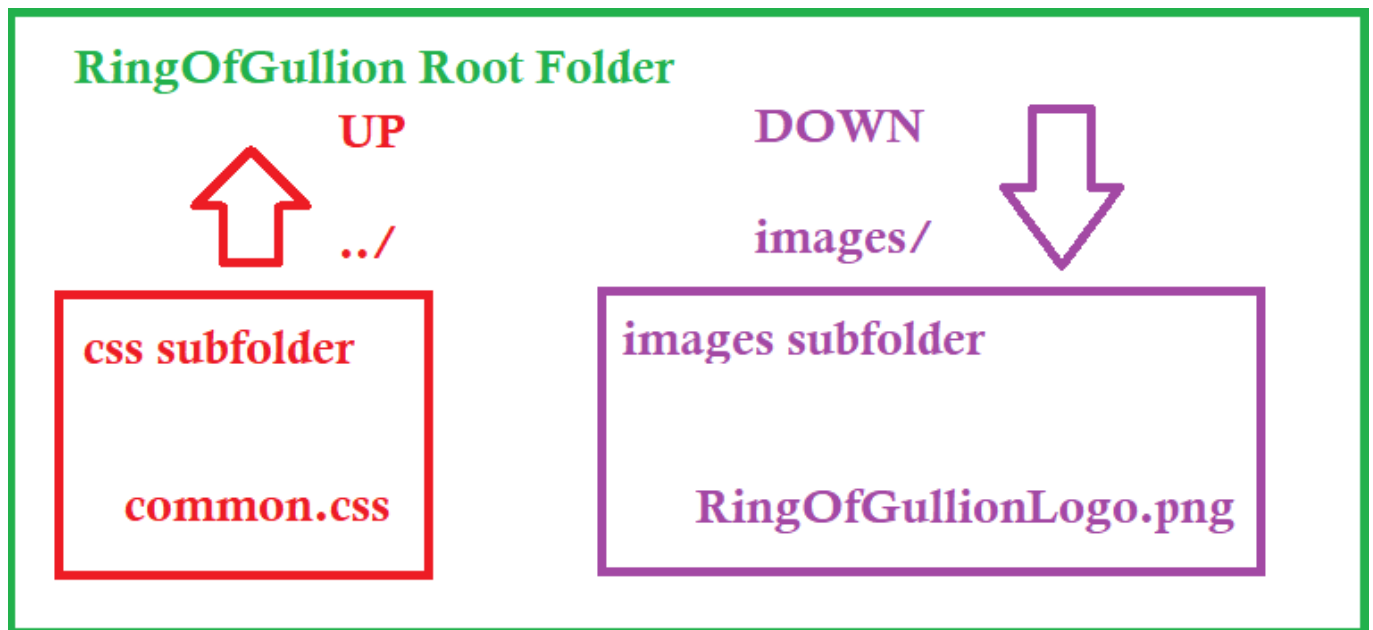
...12: RELATIVE PATHNAMES (2): UP into the ROOT FOLDER and then DOWN into a SUBFOLDER:

We want to insert a background image for the webpage, based on the Ring of Gullion logo:



What does it mean? The CSS has to access the images folder, but the css file is in the CSS folder. So it has to go:

- ✚ up one level (`../` ...out of the **css** subfolder), and then
- ✚ down into **images** subfolder,
 - hence `../images/`.



...13: IMPROVING the BACKGROUND IMAGE:

The webpage now looks like this:



A few issues here:

- The background image is **too strong**: it detracts from the webpage content.
- The background image is **too small**, and because of this, there are too many of them.
- So ... we need **a weaker larger image**, more like a banknote watermark.

How to do this?

🚩 Create a webpage called **makeBackgroundImage.html** in the **RingOfGullion** folder.

Code is below (use the basic template HTML code for starters).

 Create one `<p>` tag.

👉 Create an `` tag inside this, displaying the Ring of Gullion logo.

 Add the following style into the `<head>`:

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <meta charset="UTF-8" />
5
6     <title>
7
8   </title>
9
10    <style rel="stylesheet" type="text/css">
11      p { opacity:0.2}
12    </style>
13
14    <script>
15
16  </script>
17  </head>
18  <body>
19    <p>
20      
21    </p>
22  </body>
23 </html>
```


- ✚ **opacity**: how easy it is to see through something. A block wall has high opacity; a window has low opacity (or high transparency).
- ✚ What happens when opacity =1 or 0? **Experiment with different values** until you make the image suitably weak/'watermarkish'.
- ✚ Now **magnify** the webpage to get the weak image bigger (**Ctrl+**). Magnification reduces resolution but this doesn't matter so much for this background image.
- ✚ Try to get the opacity and size similar to the background image used in the screenshots on pages 2-4.
- ✚ Take a screenshot, paste into Paint, save as **RingOfGullionBackground.png** into the **Images** folder.
- ✚ Change the **background-image** name to this new name in **common.css**, and display the website. Your background image should look something like this:



... background image not too

distracting from the webpage content.

- ✚ **Experiment with the background-repeat style**, with the following values: **repeat-x**, **repeat-y**, **no-repeat**, and **repeat**; and observe the webpage. Verify that **background-repeat: repeat** is the same as not having this line at all i.e. it is the **default** value.

...14: HEADING STYLES:

Add the following styles:

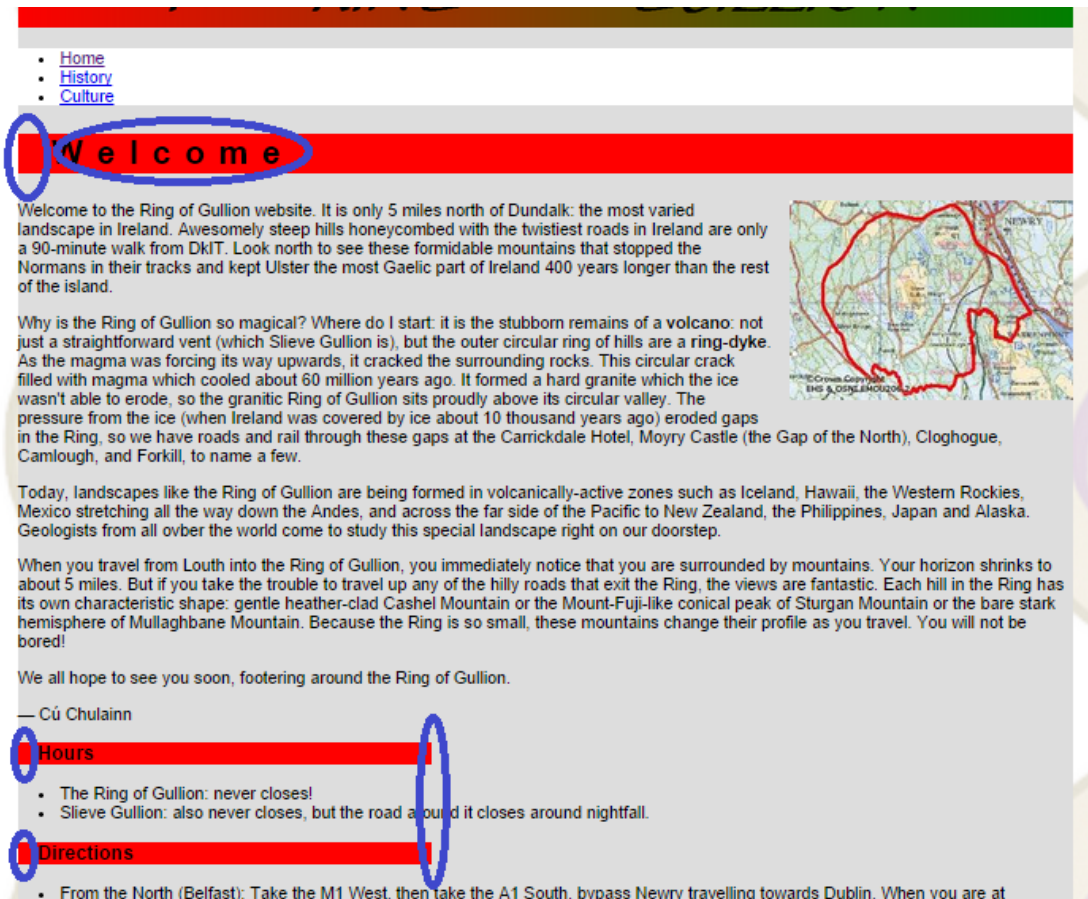
```
#gullionImage {
    float: right;
    margin: 0em 0em 1em 1em
}

h2, h3 {
    background-color: red
}

h2 {
    font-size: 2em;
    letter-spacing: 0.4em; // a.k.a. "kerning" (word-spacing a.k.a. "tracking")
    text-indent: 1em
}

h3 {
    width: 20em;
    padding-left: 1em
}
```

The webpage should now look like this:



Note that **text-indent** and **padding-left** give the same effect.

- ✓ We will remove the heading background colour later, because we want a **unique** colour for each webpage. (This will go into the unique css stylesheet for each webpage.)

...15: FORMATTING the ADDRESS:

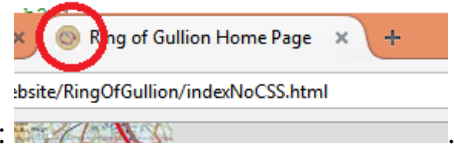
```
h3 {
    width: 20em;
    padding-left: 1em
}

address {
    text-align: center;
    font: normal small-caps 0.8em sans-serif;
    border-top: 0.5em double green;
    padding-top: 1em
}
```

Webpage looks like this:



Notice that a lot of font styles are rolled into one here (**font-size**, **font-family**, etc), so can just use **font-**.

...16: CREATING a FAVICON:

- A **favourites icon (favicon)** should appear on the webpage tab:
- A favicon is typically an easily-recognised image that is an essential part of a website's identity (have a look at Facebook, Twitter, Google, McDonalds, DkIT webpages).
- Favicons are a tiny image (typically 16px * 16px).

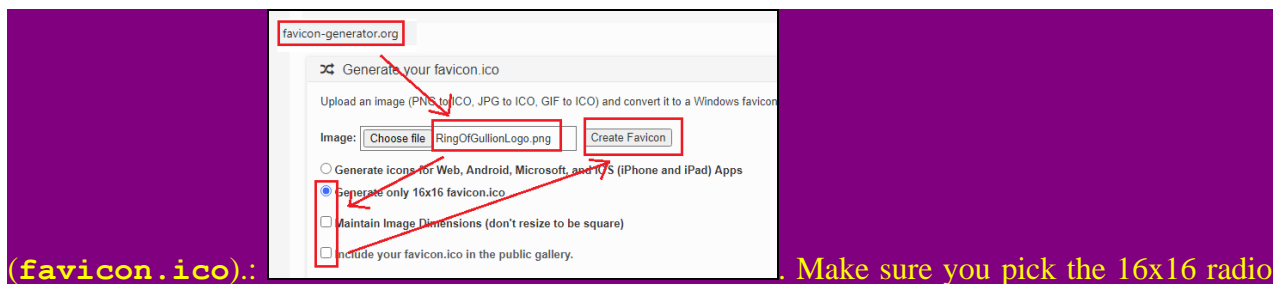
We will create a favicon from the image we used to create a background image. This image will be used four times in our website:

- 1) To create a **background-image**;
- 2) To create a **favicon**;
- 3) To use the favicon as **bullet-points for the two lists** on each webpage;
- 4) To **separate the parts of the address**.

Favicons are easy to create, done online:

Go to <http://favicon-generator.org/> or other similar websites.

Follow the instructions there to upload the Ring of Gullion logo, and to download the favicon



button.

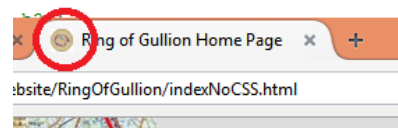
Put the favicon into the **images** folder.

Add the following code into the **<head>** of all three webpages:

```

1 <!DOCTYPE html>
2 <html>
3   <head>
4     <meta charset="UTF-8" />
5     <link rel="shortcut icon" href="images/favicon.ico" type="image/x-icon" />
6   </head>
7   <body>
8     <title>
9       Ring of Gullion Home Page
10    </title>

```



You should see the favicon appear on all three webpages.

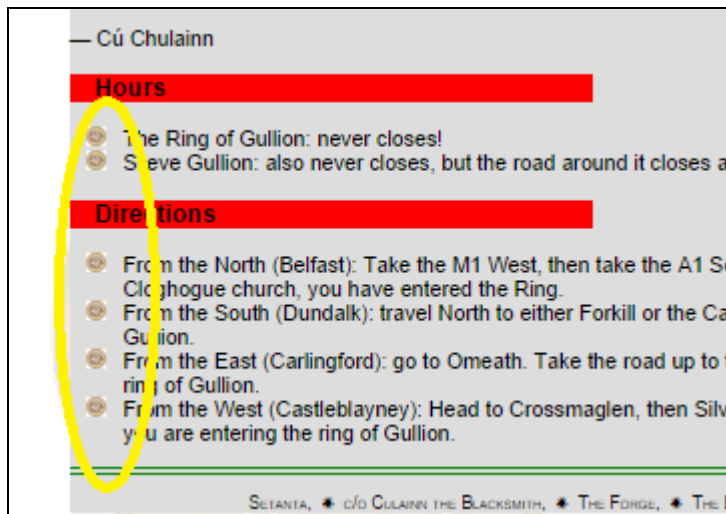
...17: USING an IMAGE (the Favicon) as BULLET-POINTS in an UNORDERED LIST:

```
address {
    text-align: center;
    font: normal small-caps 0.8em sans-serif;
    border-top: 0.5em double green;
    padding-top: 1em
}

#section2 ul {
    list-style-image: url('../images/favicon.ico');
}
```

✚ Add the following code to **common.css**:

(Notice the relative pathname .)



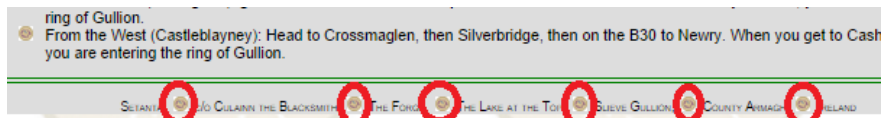
✚ Webpage:

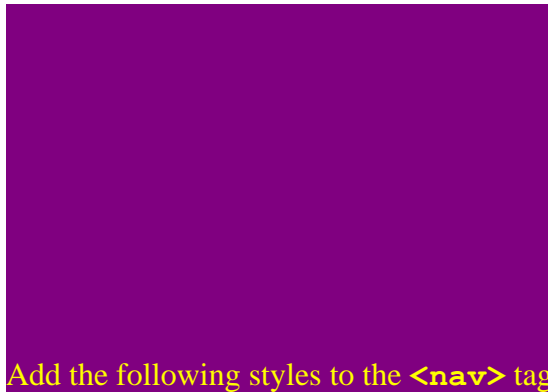
...18: USING an IMAGE to SEPARATE ADDRESS TEXT:

At the moment, there is a special character (**☀** sunburst) between parts of the address. Let's replace it with the favicon:

✚ In the **<address>** tag for all three websites, replace the sunburst special character with an image tag, **src** set to the favicon image. Don't forget the **alt** property.

✚ Webpage should look like this:



...19: STYLING THE `<nav>` STRUCTURE:

```

header {
    width: 100%;
    text-align: center;
    vertical-align: center;
}

nav {
    float: left;
    width: 10em;
    background-color: white;
    border-style: outset;
    border-width: 0.5em;
}

main {
}

```

✚ Add the following styles to the `<nav>` tag:



✚ Webpage: Welcome to the Ring of Gullion website. It is only 5 miles north.

✚ The `<h2>` and paragraph text wrap around and up to the right. This would be much more in

evidence if you added more text into `<nav>`:

refresh, but then get rid of this excess text!

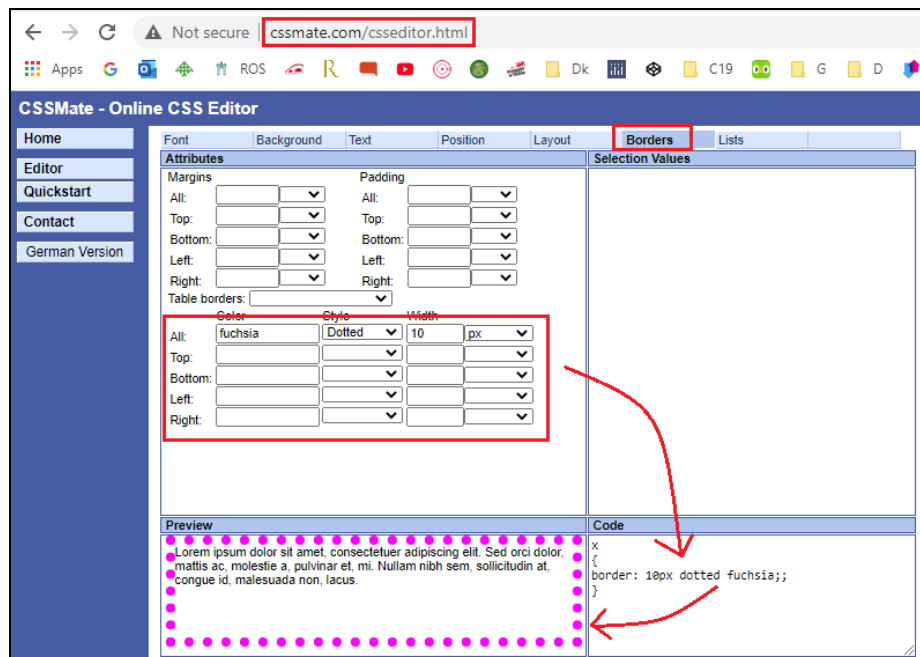
✚ Experiment with the border styles for `<nav>` (have a look at CSSeditor:

<http://cssmate.com/csseditor.html>

Borders

tab

...):



...20: STYLING the HYPERLINKS:

✚ Give them a line each (**display: block**) and space around each one:

```
nav {  
    float: left;  
    width: 10em;  
    background-color: white;  
    border-style: outset;  
    border-width: 0.5em  
}  
  
a {  
    display: block;  
    margin: 0.3em  
}  
  
main {
```



✚ Webpage:

✚ How would you move the links to the right by, say, **3em**?

...21: STYLING THE `<article>` STRUCTURE:

Let's move the `<article>` content over to the right so that there is empty space *below* the links.

The easiest way to achieve this is to set `margin-left` to a value **greater than** the width of `<nav>`:



```
article {
  margin-left: 12em;
  padding-left: 1em;
  border-left: 0.1em solid green
}
```



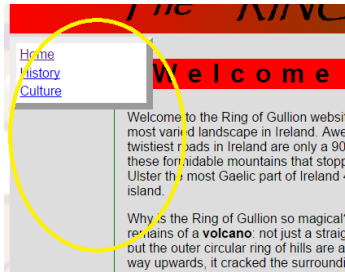
Add the following style:



A vertical green line is drawn to the left, and padding is also added to stop the text being too close to the green line.



Experiment with these style values. For example, **how can the following setup be achieved?**

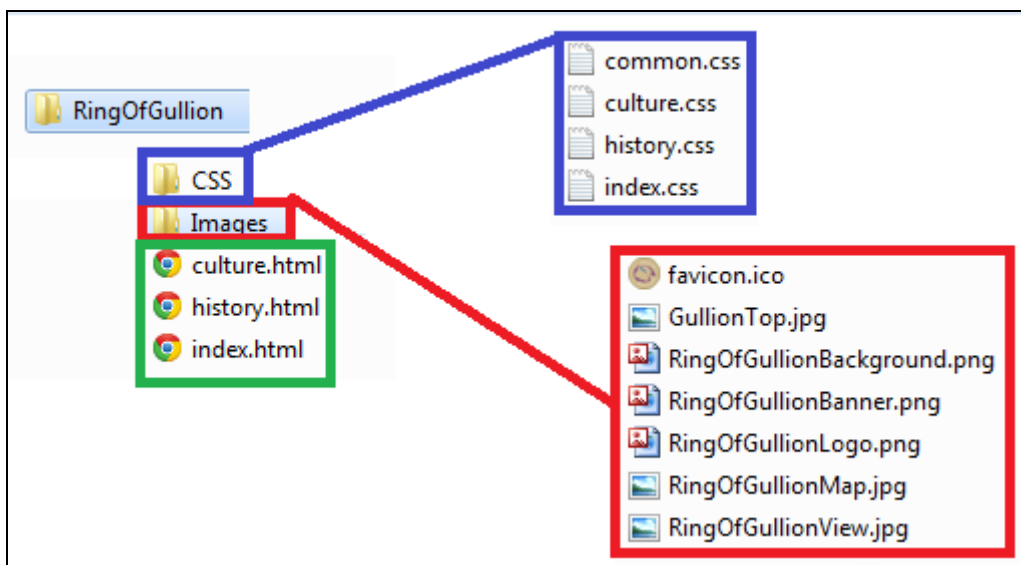


22: PART D: APPLYING CSS 2: THE UNIQUE CONTENT:

Earlier we set the background colour for the `<h2>` and `<h3>` tags to be the same in all 3 webpages. But let's give each webpage a different **heading** and **article** background colour:

- ✚ Delete the `h2, h3 {background-color: red}` style in `common.css`.
- ✚ Create 3 css stylesheets called `index.css`, `history.css` and `culture.css`. Put these inside the `css` folder.
- ✚ In each of these new stylesheets, do two things:
 - add a unique background colour to `h2, h3 {background-color: XXXXXX}`.
 - Add a unique background colour to the `article` tag.
- ✚ Link each webpage to its unique stylesheet. Each webpage now links to 2 stylesheets.

Your website structure should be as follows:






23: PART E: CONCLUSION:

Well done: all finished! Webpages look like this (full images near start of document):



You are now well on the way to creating an interesting and challenging client-side website for your mid-semester Assignment. Please build on your knowledge by exploring the huge online resources to deepen your knowledge of web development, particularly:

-  <http://www.w3schools.com/html/default.asp>
-  <http://www.w3schools.com/css/default.asp>
-  <http://cssmate.com/csseditor.html>

We can't cover everything here!

Have you decided what your website will be about? The clock is ticking!

Test your HTML code regularly at <http://validator.w3.org> . Fix any errors. Read the warnings, but don't worry too much about them.