Web Development and Databases

Practical 4 – CSS -Basics, Layout and Formatting

Practical Aim

- To learn CSS and apply simple style rules
- To practice Div, IDs and Classes
- To practice different layouts
- To learn CSS3 features and apply them e.g., animations which can be used without needing external plug-ins e.g., flash

Pre-requisite:

- CSS is applied on HTML elements. You already learned HTML (week 1 to 3) and now we need to use HTML tags more frequently. For quick revision either go through HTML lecture slides or visit HTML 5 tutorial - http://www.w3schools.com/html/default.asp to get familiar with new HTML5 tags.
- You have a web browser to load/render your web pages.
- You have VS Code or any other suitable editor to write CSS and HTML script.
- You have already created a workspace directory on your computer where you can save all your scripts.
- You have gone through lecture slides / recording.
- *You have reviewed, tried and understood lecture examples uploaded with Week 3 and Week 4 lectures. Check Week 3 and Week 4 lecture foldesr on Blackboard.*

If you need help - **ask**. If you are curious - **ask**. If you want to know - **ask**. You may work in groups but this is not compulsory.

Post-requisite: Make sure you take backup of your code.

A quick guide:
A good guide to follow is accessible from https://www.w3schools.com/css/default.asp.

Exercise 1: You're given few .html files. Your tutor will demonstrate i) CSS_div_example_inline.html, ii) CSSinternalDiv.html and iii) CSSexternal_example_demo.html with CSSexternal-example_demo.css to show you how inline, internal and external CSS style rules can be applied on <div> and element selectors.

Perform the following tasks.
Task 1: **classCenter.html** file has a <p> and <h1> elements. Create internal style to create a class with style rule to centre align the text. Use this class with <p> and <h1>. Hint: text-align property
Task 2: CSSexternal_Div_example.html file has several <div> tags. Create an external stylesheet and introduce IDs to convert CSSexternal_Div_example.html to something like in Figure 1:
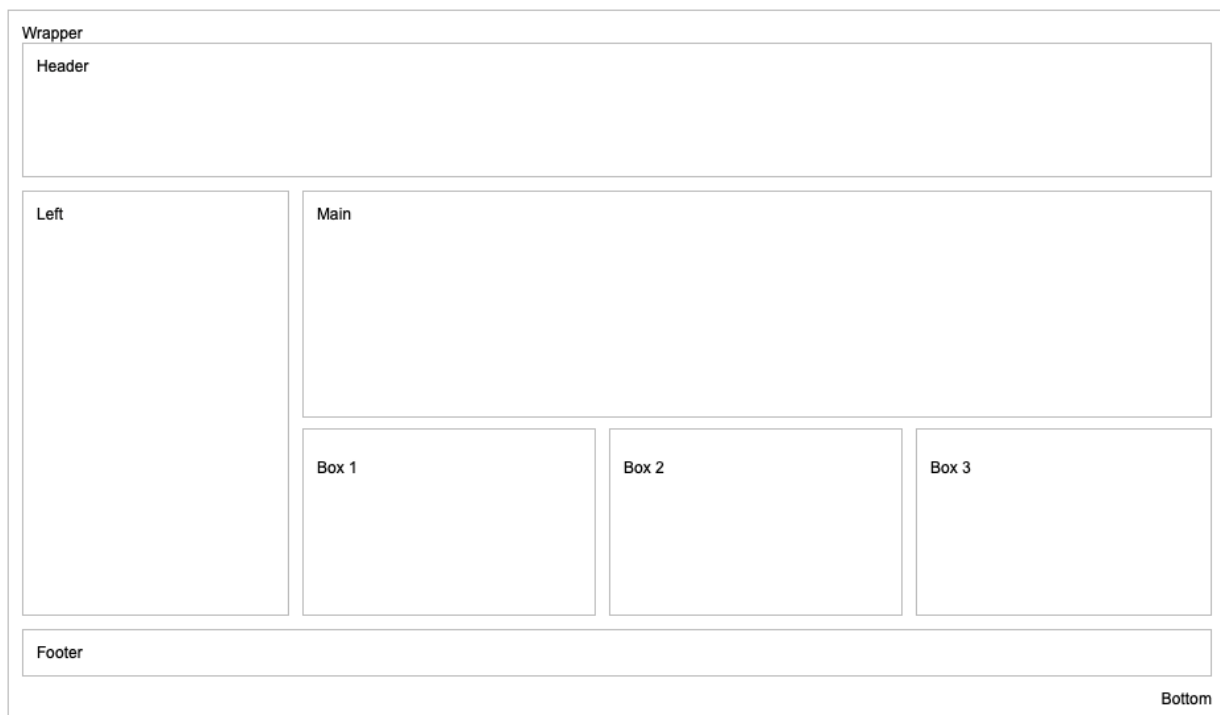

Figure 1: CSSexternal_Div_example expected layout.

Hint 1: To keep it simple you may use values of width and height properties in px.
Hint 2: You may also need to use float property.
https://www.w3schools.com/cssref/pr_class_float.asp

Exercise 2: Load **myHTMLwithCSS_demo.html** (which uses **myCSS_demo.css**) in a web browser, see the output and understand the html and css script. Now perform the following tasks:

Task 1: Make page heading center-aligned. Hint: check H1 element style rule

Task 2: Make all paragraphs left-aligned. Hint: check p element style rules

Task 3: Remove the border lines from H2. Hint: check H2 element style rules

Task 4: Remove the dotted border from navigation elements. Hint: check <li> element style rules

Task 5: Change/use appropriate background and text colour combinations for myHTMLwithCSS_demo.html. Hint: be creative here for background and text colour contrast e.g., dark blue background and black text colour is not a good combination!!

Task 6: If you carefully check, the UWEcrest.jpg image is starting slightly below the header line. Change .html and/or .css file to horizontally align header and image. Hint: check h1 tag in .html file.

Task 7: Add a red colour border around the web page. Hint: check how borders are added to H2.

Exercise 3 : Discuss with your tutor(s) how is CSS relevant to your Website Project? What would be your approach to apply CSS on your Website and Why? Hint: Don't forget the 'Separation of Concern' design principle.

Exercise 4: You are given UWEhtml4.html. Perform following tasks.

Task 1: Change the layout/presentation of the UWEhtml4.html file contents as shown in the following figure 2. You should save the updated file as UWEhtml4_V1.html. You can use internal style for css style rules.
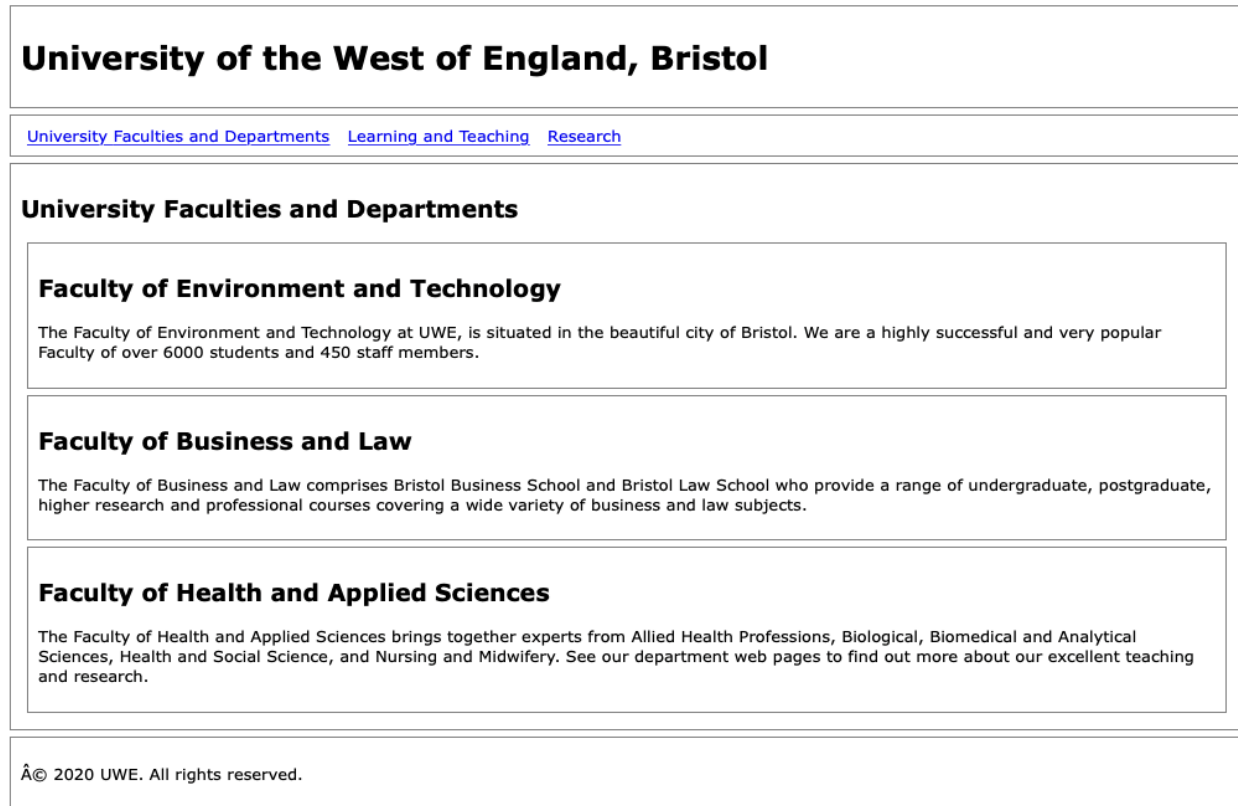
Hint: border property.

Figure 2: Target UWEhtml4_v1 layout and presentation

Task 2: Change the layout/presentation of the UWEhtml4.html file contents as shown in the following figure 3. You should save the updated file as UWEhtml4_V2.html. You can use internal style for css style rules.

Hint: background-color and color properties.

Figure 3: Target UWEhtml4_v2 layout and presentation

Exercise 5:

For this exercise, you may reuse **HTML5_tags.html OR** you may create a web page that you planned for your Website project.

Try to structure your webpage presentation by putting the visual layout into four parts as shown below:

Header (100% width)	
Left navigation menu (25% width)	Web Contents (75% width)
Footer (100% width)	

Hint 1: Remember CSS box model and how padding, margin and border can affect width of an element**. https://www.w3schools.com/css/css_boxmodel.asp

Hint 2: Check layouts https://www.w3schools.com/css/css_website_layout.asp. **You may need to use Div tags, IDs/Classes. You should be able to create above layout by using float property.** With float property the sequence of HTML elements in .html file is important. If you use **float** then check box-sizing property. https://www.w3schools.com/css/css_float.asp

Hint 3: for left navigation you may need display property. Think creatively.
https://www.w3schools.com/cssref/pr_class_display.asp

Hint 4: **For advance use you can try flexbox** -
https://www.w3schools.com/css/css3_flexbox.asp

Exercise 6: Try to convert the structure of your webpage presentation (Exercise 5) by putting the visual layout into five parts:

Header with a logo/image (100% width)		
Left navigation menu (20% width)	Web Contents (60% width)	Right aside - highlights/notifications (20% width)
Footer (100% width)		

Hint 1: if you used flow property then keep <aside> after <section>.

Exercise 7: Use an existing webpage and extend it with new code to perform a continuous animation of an object (e.g., image or div box) by using CSS3 features.

Hint: Check CSS3 Animation. https://www.w3schools.com/css/css3_animations.asp

Homework
Exercise 8: CSStable_example.html presents output as shown in figure 4. Perform the following tasks.
Task 1: change the html file and add NOx sensor reading column (next to PM2.5 column).
Hint: add column to table 2.

Task 2: Think and discuss with tutor what problems you may face when you have to extend and fill the table with data for all 12 months.

Hint: here we are thinking how can we automate this data filling process and show in tabular form….

Task 3: Think creatively – what different CSS style rules you can apply on CSStable_example.html? Create table.css and link with CSStable_example.html.

Hint 1: font-family, font-size, text-alignment, background-color, color, border, width, etc.

Hint 2: An indicative/sample output could be something like in Figure 5:

Figure 4: Simple output of Table example (without formatting)

Figure 5: Sample output for Table example (with formatting)