# SUBMISSION 2- IMPLEMENTATION

Web & User Interface Design

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**Overview:**

This project relates to the development of a website for CoDO (which can be found online at www.codowe.com), an emerging architecture and design office based in Melbourne Australia, utilising web technologies including HTML5, CSS3 and JavaScript. This website is also for submission to Prof. Andrea Curley of DIT, as part of Web & User Interface Design, DT265A. This document accompanies the second submission – implementation, and aims to outline the implementation process, addressing the requested topics in the assignment brief.

**2. Implementation:**

a) Implementation

iii. How does the use of HTML and CSS address responsiveness?

In the CoDO website, responsiveness was addressed in a number of ways. For example, by setting the viewport in the header using a <meta> tag. The viewport is the user's visible area of a web page. The *width=device-width* part sets the width of the page to follow the screen-width of the device. The *initial-scale=1.0* part sets the initial zoom level when the page is first loaded by the browser.

*<meta name="viewport" content="width=device-width, initial-scale=1.0">*

Also, fixed width element of the 'wrapper' is only used for desktop; elsewhere the wrapper is dynamic and is adjusted according to the device/browser dimensions.

And of course, '@media' queries have been used to adjust certain aspects of the design based on the browser/device. This is perhaps most evident in the difference between the desktop and mobile 'navbar' (Figure 1 and Figure 2).

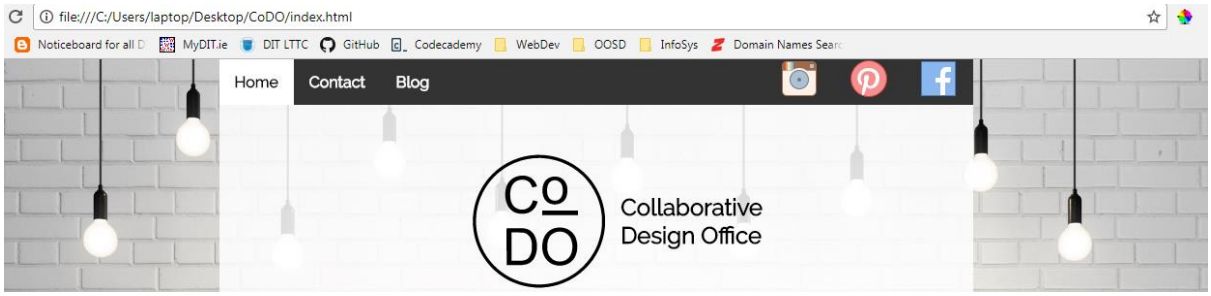


*Figure 1: .navbar desktop*

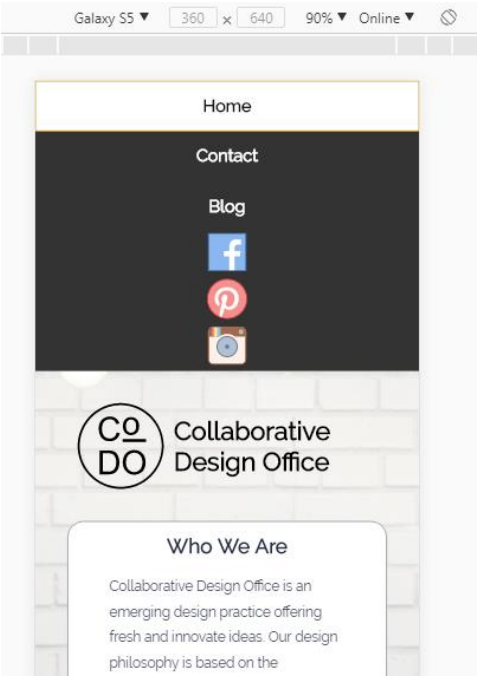


*Figure 2: .navbar mobile*

iv. Use of JavaScript

JavaScript has been used twice in this website. Firstly, the imported JavaScript is in the form of the 'Snazzy Map' based on Google Maps (https://snazzymaps.com/), which has been incorporated into the contact.html page. The directions were fairly clear, and the accompanying code was adjusted by moving the JavaScript code to an external .js file to improve speed (maps.js), and by moving the styling to mystyles.css (to keep consistency in styling, and assist in adjusting the position and responsive size through CSS).

Second, an individual JavaScript (popup.js) has been implemented in the form of a pop-up text box when someone clicks on the footer sentence that has my name down as the designer of the site. It is fairly hidden, but the intention here was to learn the mechanics of an on click function and add a little Easter egg to the site.


*Figure 3: Footer pop-up*

This is achieved through the use of a simple JavaScript function (below) which creates a variable, in this case popup, and retrieves the element in the HTML document using the *document.getElementById* command. The *classList* property returns the class name of the element, as a DOMTokenList object. This can be used to add, remove and toggle CSS classes on an element, in this case we are using toggle to make the popup "appear" when clicked.

```
function popupFunction() {
    var popup = document.getElementById("myinfo");
    popup.classList.toggle("appear");
}
```

The HTML involved in calling this function is shown below. First, the sentence is given a class, and the 'onclick' attribute. The  tag is then used to add a hook to the text in this part of a document.

```
<p class="popup" onclick="popupFunction()">Website Design by Ruarai Kirk
    <span class="popupinfo" id="myinfo">Get in touch at ruaraikirk@gmail.com</span></p>
```

Finally, the pop-up is styled with CSS. Most notably, the class is 'toggled' using the CSS below (.appear class). When this class isn't called by the JavaScript function, the visibility attribute is set to hidden.

```
.popup .appear {
    visibility: visible;
    -webkit-animation: fadeIn 1s;
    animation: fadeIn 1s
}
```

v. Responsive images

As the company (CoDO) is in the very early stages, and has a basic logo, the main centrepiece of the website is the background image, which was chosen by Brian the company director. So it is important that responsiveness is considered when implementing this background. Firstly, the image file loaded depends on the device, so for desktop the 1034kB *iStock-618197042_Large.jpg* image is used, whereas for tablets and mobile, the 445kB *iStock-618197042_Medium.jpg* is used. If required, there are both larger and smaller images on file, and as the website goes live and is used, I will adjust and optimise this setup (e.g. use better quality images where possible, utilising larger quality images for retina displays using the srcset facility).

In addition, I have used a .svg image for the logo. This is because, unlike pixel-based image formats (such as JPEG and PNG), SVG is a vector-based graphics format, meaning it can scale up or down to any dimension without loss of quality (https://internetingishard.com/html-

and-css/links-and-images/#image-formats). It also allows for transparent pixels, which helps add to the background effect I was trying to achieve.

vi. Use of other technologies

1. Technologies:

- Form

The front-end of a form has been implemented into contact.html. This was primarily based on class notes, but I have added some extra items such as 'required' attribute. When present, it specifies that an input field must be filled out before submitting the form (Figure 3).

Further work to be done is to enable this form to email the company. I plan to do this potentially by using .asp/.aspx, but this is scope for future work.

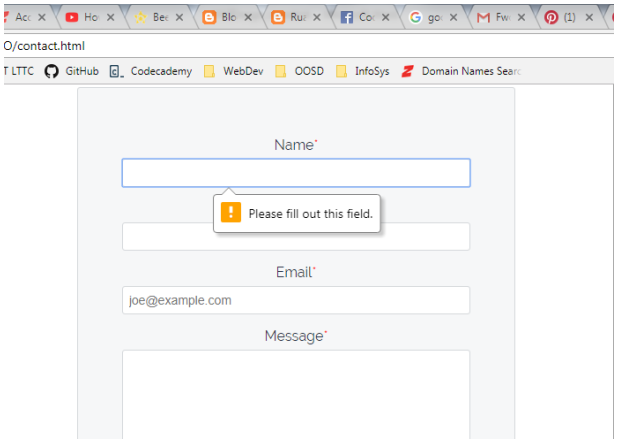


*Figure 4: required attribute of <input> tag in action*

- iFrame

iFrame has been used in blog.html to integrate CoDO's Facebook page as a blog (http://bloggeropedia.blogspot.ie/2014/09/how-to-embed-live-facebook-page-feed-to-website-or-blog.html). I am not completely satisfied with this as it doesn't tend well to mobile portrait.

Another option was to use JavaScript SDK from Facebook (https://developers.facebook.com/docs/plugins/page-plugin/). However, I could not get this to work in time.

For future improvement, I may try to utilise CoDO's Instagram or Pinterest as they may have more aesthetically pleasing embed options for their feed.

- FlexBox

FlexBox has been used on one item in this website, the Logo and H1. I was tempted to use this more, however, for this website I wanted to become more comfortable with the fundamental mechanics of HTML and CSS. Also, although FlexBox has good support (https://caniuse.com/#feat=flexbox), I was trying to maintain compatibility with legacy browsers and devices.

2. Do they fit in well with the website?

I believe that these technologies fit in well and assisted in getting the required information across to and from the user. They have also helped in getting all of the design criteria hit (blog, contact form, responsiveness of logo etc.).

**3. Test and Evaluation:**

a) State:

i. Lines in CSS: 365 approx. (pre online and user testing).
ii. Lines of adjusted CSS: No Framework used, external code referenced.
iii. CSS framework: None.

For this website, I decided not to use a CSS framework. This is not because I do not see the merit of a CSS Framework, or indeed using grids, etc. (from research into grids they looks super useful and quick), but rather the choice was made for the purpose of forcing me to get stuck into the mechanics, trials and tribulations of CSS.

For my own personal learning, I did not want to get stuck into using a framework, encounter issues and then not having the know-how or knowledge to debug the problem. Building the site from scratch has made me more comfortable with items such as the the box-model, positioning, etc., which for me was more beneficial for my confidence in using HTML and CSS.

b) Website Speed Test:

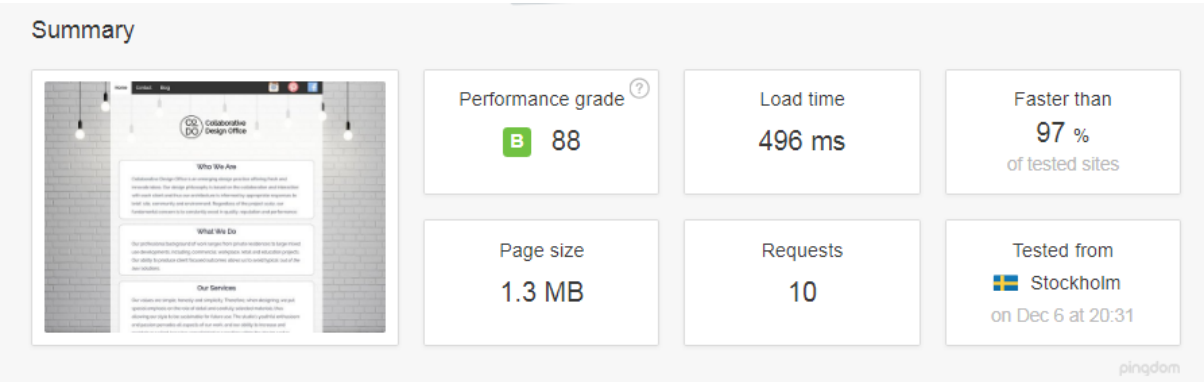


*Figure 5: required attribute of <input> tag in action*

i. The website speed was tested using https://tools.pingdom.com/. As the site is using a European datacentre, the location was chosen as Sweden. Then site will eventually be hosted in Australia, so similar results are to be expected. The website load time was **496ms**, which is down as faster than 97% of tested websites on this tool.

ii. Changes to the website would be to reduce picture size, but this would take away from the aesthetics of the website, a sacrifice that is being made in this case. Another option is to relocate location of scripts (farther down the HTML document).

iii. Speed of altered website not measured.

c) Website Responsiveness Test:

The website was tested in various other tools to check for errors and areas for improvement. In terms of responsiveness, www.ready.mobi/ was used and the CoDO website achieved a decent score, but with room for improvement.

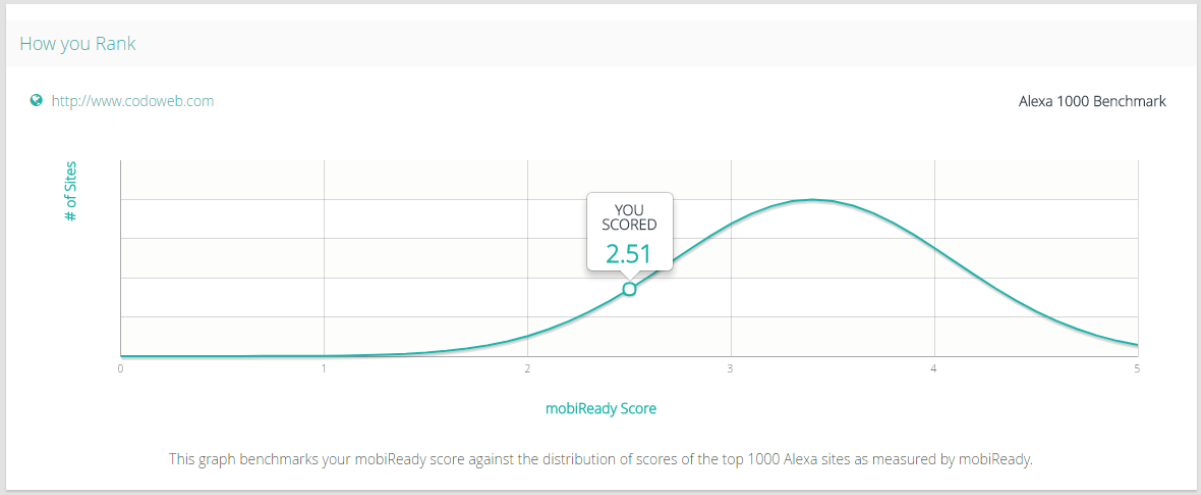


*Figure 6: mobiReady score*

Other testing sites were utilised, including www.wave.webaim.org, www.mobile.css-validator.org, and www.validator.w3.org, all of which brought up useful hints and tips, including:

- Missing ‘alt’ attributes for images
- Unnecessary ‘type’ attribute for the popup.js script
- JavaScript placement

d) Customer

i. The main test for this website was the client, Brian from CoDO. He provided feedback on website usability and look. Some of the feedback was points that were already noted, but some were also unnoticed during the design phase. Some examples of the feedback include:

- Logo clashing with background
- Background photo on contacts page is different zoom/size
- Some wording changes

- Form not working.

Overall however, feedback was positive and any feedback was constructive and not a major issue to address.

e) Outcome of website test and evaluation
   i. Result: Please see above.
   ii. Mobility: Please see above.
   iii. Recommendations for further development
      - Extra page for projects as jobs are completed by the company.
      - Horizontal social media links for mobile
      - Use alternate approach for blog (embedded feed)
      - Add asp/aspx to make form functional

**Conclusion:**

For comparison, CoDO's original site (using the native builder on Crazy Domains) can be found at www.codo.net.au, and will soon be replaced by this assignment submission www.codoweb.com, albeit with further improvements as mentioned above. The experience of building a website from scratch whilst trying to cater for the both the technical and the client requirements has been a great learning experience. With some further amendments the website will go properly live on the .com.au domain in the not so distant future. All the relevant files can be found in the zip file provided.

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