# TU259
# Web & User Interface Design

# Assignment
# Submission 2 - Implementation

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## Declaration

I hereby declare that the work described in this report is, except where otherwise stated, entirely my own work and has not been submitted as an exercise for a degree at this or any other university.

Signed:

*Bearach Byrne*

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Bearach Byrne

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# 1.  Introduction

This report deals with the implementation section of the Web & User Interface Design Assignment, below the aspects in the project brief have been discussed with specific reference to the webpage created for this project.

# 2.  Coding

## 2.1.  JavaScript

There were 3 JavaScript functions used in this project. One of which was relating to the top navbar which was taken in part from a WSchools tutorial. [1] The other two functions that were implemented were relating to the

download links in the "Downloads" section of the page. These were implemented primarily to notify the user that they had selected to download a file in case their device was slow to download it and it had not opened yet.

```
<script>
function myFunction() {
  var x = document.getElementById("myTopnav");
  if (x.className === "topnav") {
    x.className += " responsive";
  } else {
    x.className = "topnav";
  }
}

function fypDownloadClick() {
  var txt;
  alert("Congratulations! You are probably the first person outside of me and my project supervisor to
 read this!");
}

function cvDownloadClick() {
  var txt;
  alert("Congratulations! You are probably the first person outside of me and my project supervisor to
 read this!");
}
</script>
```

## 2.2.   External Icons

Another external reference used in this project was that of the FontAwesome CSS toolkit, this was used for both the media icon links in the footer (LinkedIn etc.) and the icons used in the "Interests" section. [2]

# 3.  Website Speed

Below I have outlined 2 methods that were used to aim the loading speed of the website.

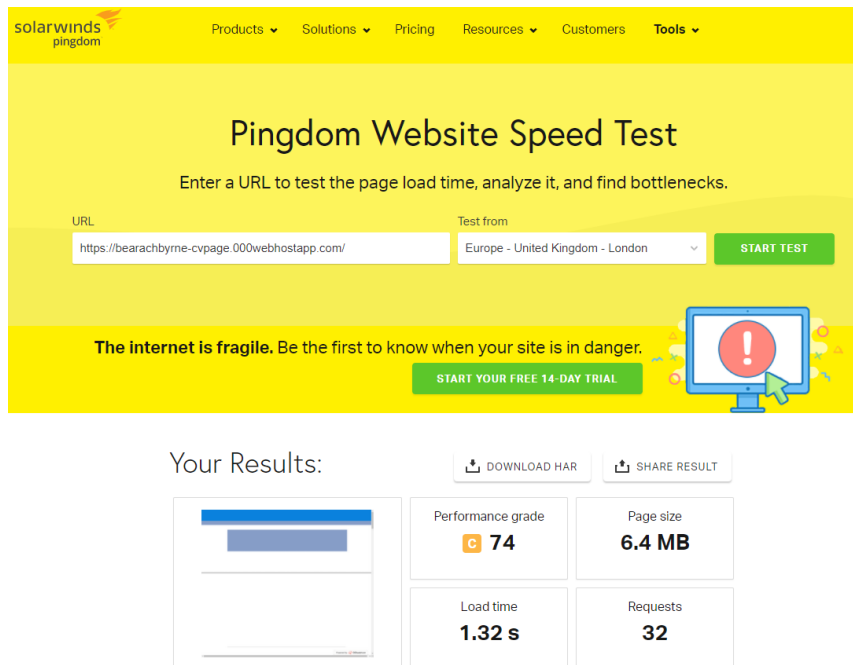## 3.1.   Initial Website Speed



*Figure 1 - Original page performance results from Pingdom.com*

## 3.2.    Changes to Improve Speed
### 3.2.1.    External JavaScript

While there is some debate as to whether this change will actually improve the loading speed of a page (due to the many variables involved in each specific use case), there is enough discussion about the topic that it has been decided to include it. One change that was implemented in order to increase the speed of the webpage was the removal of the JavaScript code from within the main html file and relocating it into its own dedicated external JavaScript file in a separate folder. Currently there is only a very small amount of JavaScript in this simple project, and as such the results of moving the JS into an external file will be minimal. However, as the webpage grows in size and in complexity and especially as more JavaScript is added this difference should have more of an impact and should allow the page to load faster.

```
<script>
function myFunction() {
  var x = document.getElementById("myTopnav");
  if (x.className === "topnav") {
    x.className += " responsive";
  } else {
    x.className = "topnav";
  }
}
function fypDownloadClick() {
  var txt;
  alert("Congratulations! You are probably the first person outside of me and my project supervisor to read this!");
}
function cvDownloadClick() {
  var txt;
  alert("Thanks for downloading my CV!");
}
</script>
```

*Figure 2 - The original JS code within the main html file*

```
<!-- External JS file linked in -->
<script src="assets\js\test.js"></script>
```

*Figure 3 - The updated external JS file that has been referenced*

### 3.2.2.    Image Size Reduction

Another method that was used to improve the loading speed of the page was to decrease the file size of some of the images on the page. This was done using the free tinypng.com compression tool. On the image this was done on (the headshot in the About Me section), it was able to compress the image from 1.76MB down to 852KB which is a 53% decrease in file size, all while keeping most of the detail needed.
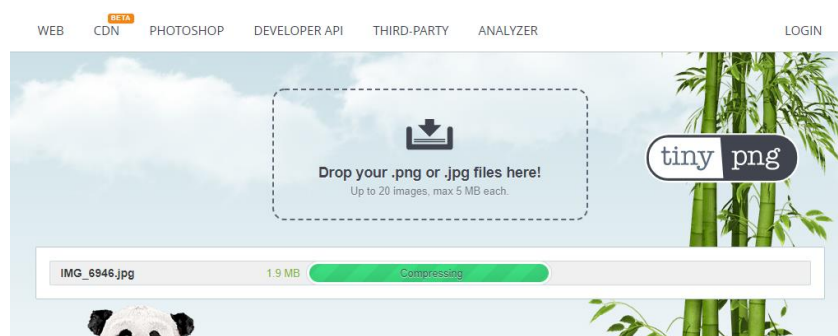


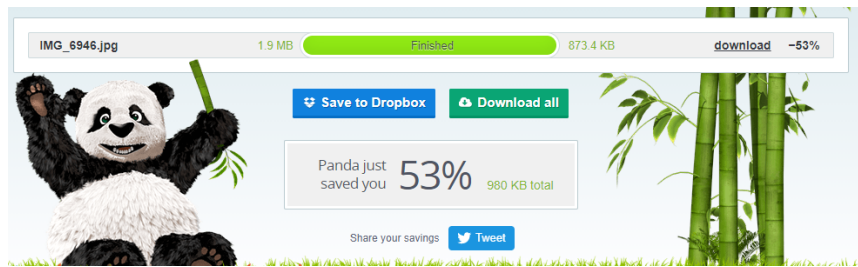*Figure 4 - tinypng.com compressing the image*

*Figure 5 - The compressed image results*

As can be seen in the comparison below, there is very little perceptible difference between the old and new image.



*Figure 6 - The side by side of the original (left) vs compressed image (right)*



*Figure 7 - Original image sizes*



*Figure 8 - Compressed image sizes*

After compressing all images, the total image folder size was reduced from 9.67MB to just 1.56MB without any major loss of quality in any of the images.

## 3.3.    Altered Website Speed

As can be seen, the two changes made above did provide a tangible speed increase to the webpage. Bringing the loading time from 1.32s down to 1.2s. While this change of 0.12 seconds may not seem like a huge amount, there is quite a large discussion online looking into bounce rates for various loading times [3].

| Page Load Time (seconds) | Bounce Rate (%) |
|---|---|
| 1 | 7 |
| 2 | 6 |
| 3 | 11 |
| 4 | 24 |
| 5 | 38 |
| 6 | 46 |
| 7 | 53 |
| 8 | 59 |
| 9 | 61 |
| 10 | 65 |
| 11 | 62 |
| 12 | 67 |
| 13 | 69 |
| 14 | 66 |
| 15 | 69 |
| 16 | 73 |

*Figure 9 - The table shown on the SolarWinds blog detailing bounce rates for their website [3]*
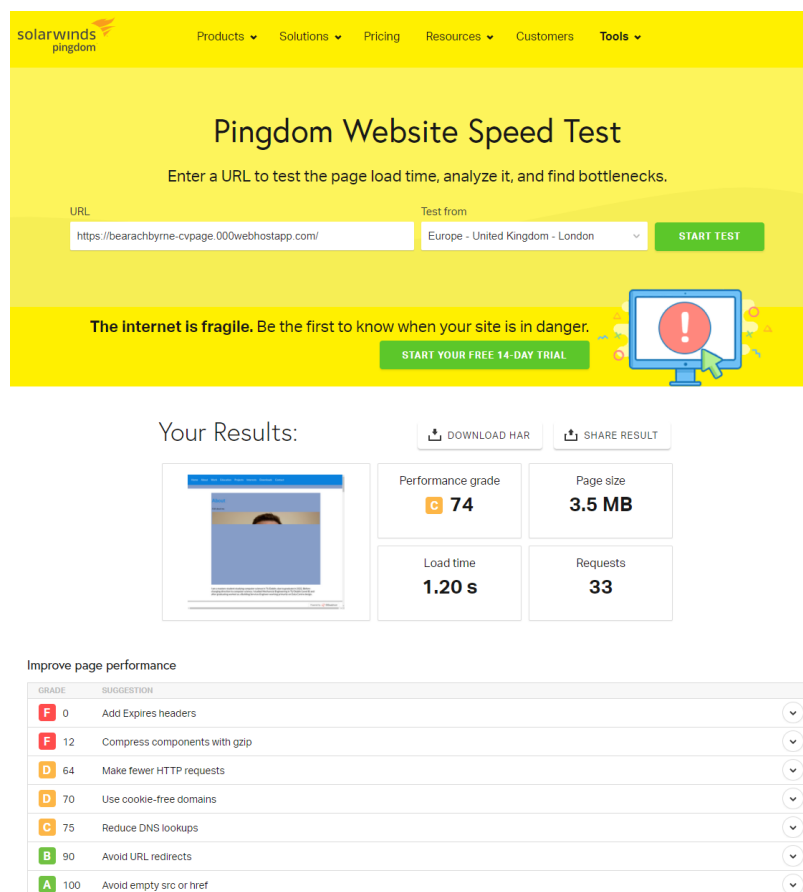


*Figure 10 - The updated page performance results taken from pingdom.com [4]*

## 4. Responsiveness

To assess the responsiveness of the page to various devices, the Chrome developer tools were used to simulate three devices.

The responsiveness of the page is the primary area where the design of the page really fell down, due to time constraints the proper functionality was not implemented into the CSS of the page to fully take advantage of the @media styling. As such the page ended up with an extremely simple single page, single column design that did not scale very well.
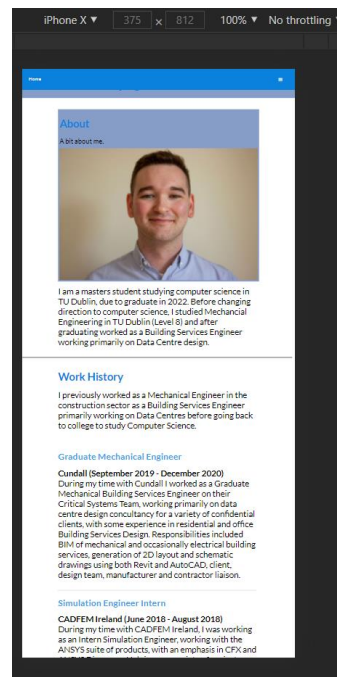
## 4.1.    iPhone X
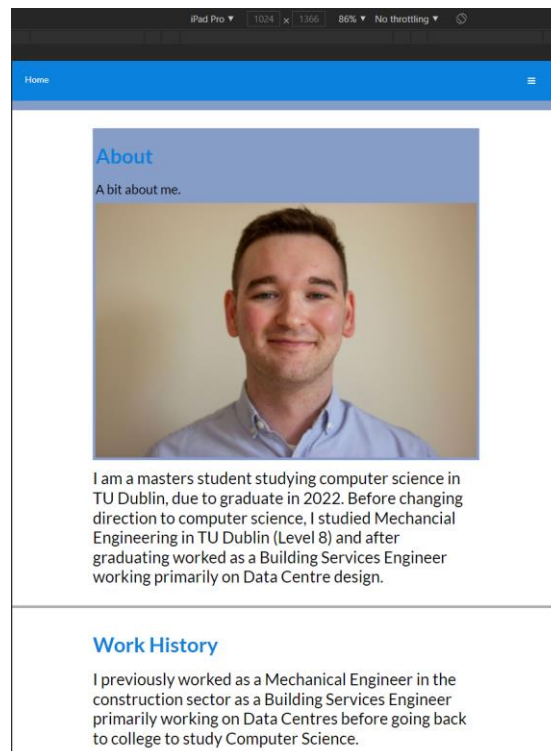


*Figure 11 - The iPhone layout*

## 4.2.    iPad Pro



*Figure 12 - The iPad layout*
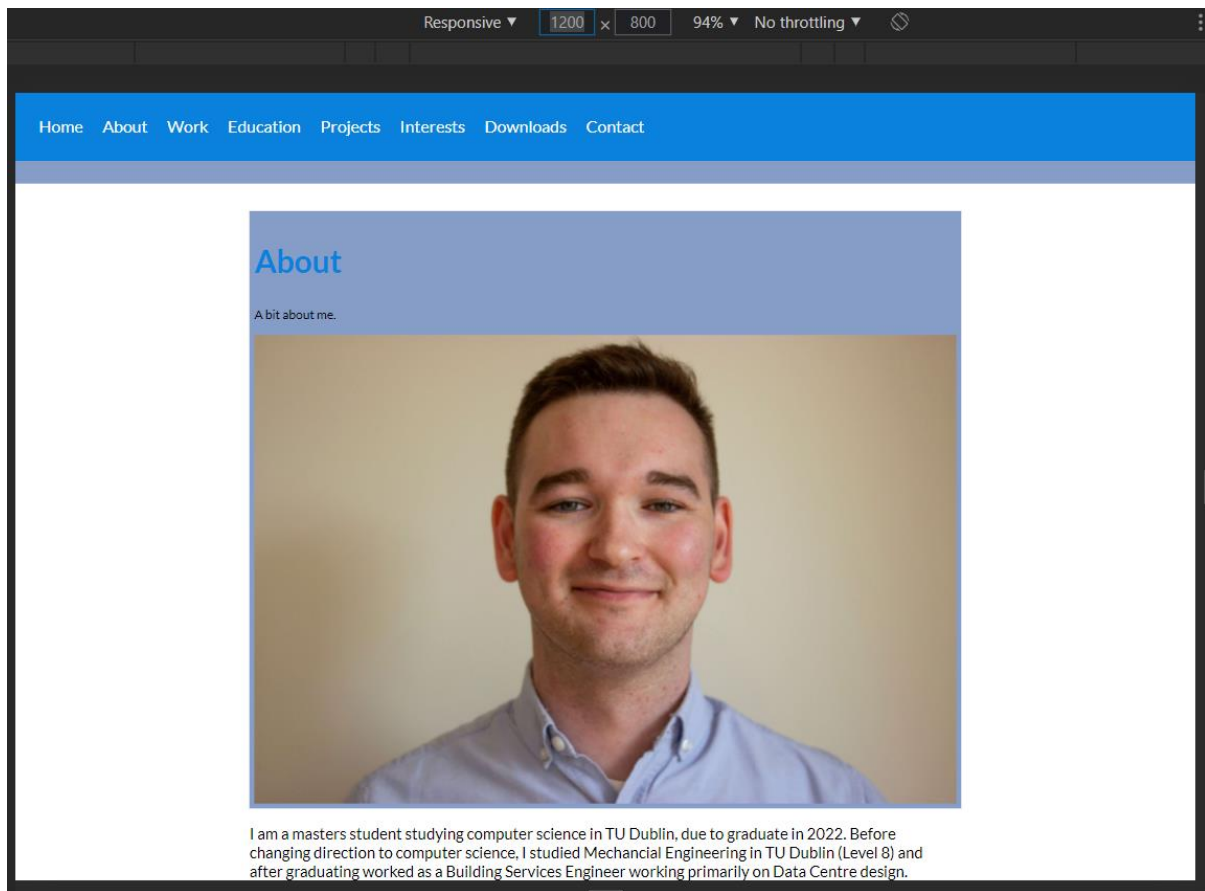
## 4.3. Desktop (1200px wide)



*Figure 13 - The desktop layout*

# 5. Useability & Functionality

## 5.1. Survey

In order to assess the site the webpage was hosted using the free website 000webhost.com. This allowed me to host the site and pass on a link to friends so they could answer my survey questions.



*Figure 14 - The Google forms survey*

The survey asked a total of 9 questions with some basic information being asked, along with some yes or no questions and some text box feedback allowing the user to enter anything they wanted.

## 5.2.    Survey Results

In all, I received 10 responses to the survey.
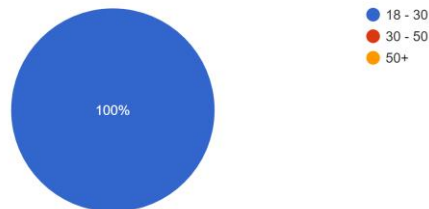
**What age category are you in?**
10 responses



*Figure 15 - Response to Q1*

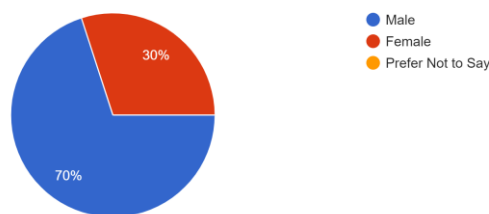**What gender are you?**
10 responses



*Figure 16 - Response to Q2*

**Which device(s) did you view the site on?**
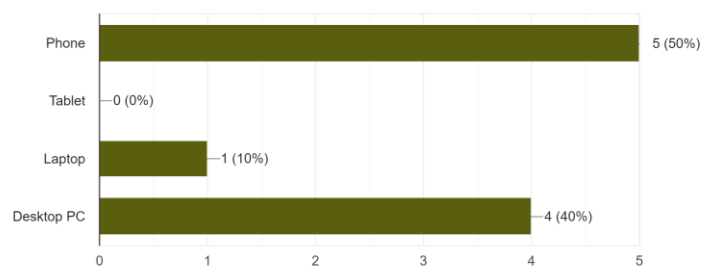10 responses



*Figure 17 - Response to Q3*

How attractive did you find the site?
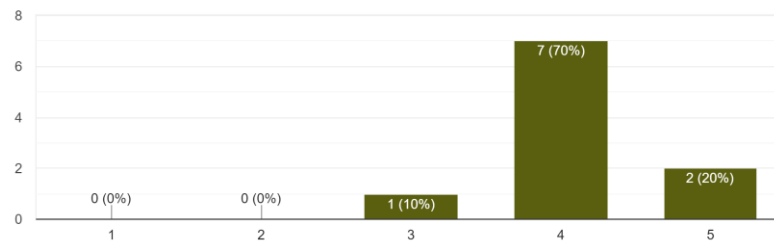10 responses



*Figure 18 - Response to Q4*
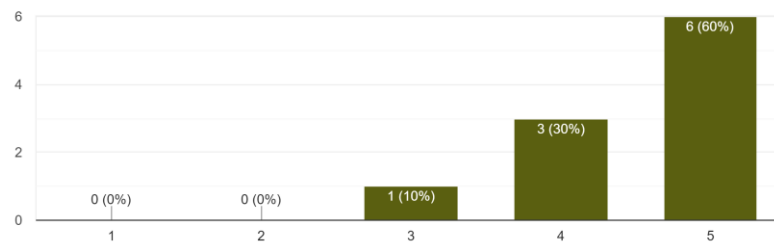
How useable did you find the site?
10 responses



*Figure 19 - Response to Q5*

If you were a recruiter, do you think this site would help your opinion of me as a potential candidate?
10 responses
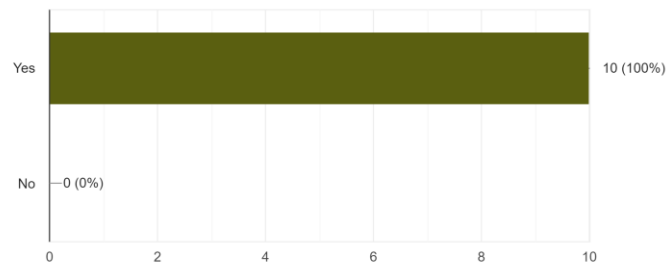


*Figure 20 - Response to Q6*

## Question 7 - What did you like about the site?
**10 responses**

1. Loved seeing all your projects
2. The fact that it was all one page was very useful. Everything is well laid out and the user isn't overwhelmed by the information.
3. it has all the information needed, laid out well
4. Easy to interact with
5. Nice layout, easy to navigate
6. Features a clear and easily navigated layout.
7. Popup when downloading CV
8. I liked the use of visuals to break up the text, added an eye catching and interesting element!
9. Also pretty to the point and not too wordy which is good
10. Simple, clean, straight to the point.
11. Clear and logical flow to it. Nice tone to the written sections and not too drawn out. Nice photos.

**Question 8 - What did you dislike about the site?**
**10 responses**
1. more text hierarchy would make the information read better
2. It probably could have done with more structure; it is quite linear at the moment.
3. I thought it was slightly long
4. Information layout
5. Nothing comes to mind
6. The colour palette seems a bit basic. It would benefit from the inclusion of a greater range of shades.
7. Nothing
8. The text could be a little larger and in a more professional font
9. Very cantered, large areas of wasted space on larger screens.
10. Could be a bit more separation between sections/pages on mobile. Header cuts off Online CV text on mobile unless hamburger is clicked.

## 5.3.  Further Development

There are many areas that I would like to improve on this very rough first draft of a web based CV site. In no particular order, changes that I would make:
1. Dual column display for tablets/desktops – This was initially the layout I had chosen and aimed for, however I was unable to successfully implement it by the time the website needed to be finished, as such the page has an overly simple design.
2. Better text scaling/responsivity – The text sizing could do with better scaling as it doesn't look good on really any device.
3. More images – I would love to spend
4. Potentially splitting the site up into different pages – Due to the single page of the site, loading times were very slow. Going forward I would like to split it up so that only the bare minimum could be loaded in order to reduce the loading times/speed as much as possible.

In the survey I also gained valuable feedback on features the respondents would like to see:
**Question 9 - What suggestions would you make to improve the site?**
**10 responses**
1. Perhaps more colour blocking or a more fun way of showing your interests. Maybe a word cloud like we did for that python project
2. Go into more detail about your work, this should be more detailed than a regular CV.
3. might have worked better on separate pages
4. Colour Scheme
5. Maybe put your name at the start above the photo
6. Perhaps the font in the menu bar could be made larger.
7. Better visuals
8. Attention to minor details and repeating of information. Maybe a more professional font
9. Could use scaling for larger screens. Page scaling sideways could be an option.
10. Just polishing the look with time and making it look great on different devices or monitors.

# 6. References

[1] W3Schools, "How TO - Responsive Top Navigation," 12 May 2021. [Online]. Available: https://www.w3schools.com/howto/howto_js_topnav_responsive.asp. [Accessed 12 May 2021].

[2] FontAwesome, "FontAwesome," FontAwesome, [Online]. Available: https://fontawesome.com/v4.7.0/. [Accessed 05 May 2021].

[3] Solar Winds, "Does Page Load Time Really Affect Bounce Rate?," [Online]. Available: https://www.pingdom.com/blog/page-load-time-really-affect-bounce-rate/#:~:text=What%20we%20found%20was%20that,time%20it%20hits%205%20seconds!. [Accessed 13 May 2021].

[4] SolarWinds, "Pingdom Website Speed Test," SolarWinds, [Online]. Available: https://tools.pingdom.com/. [Accessed 12 May 2021].