

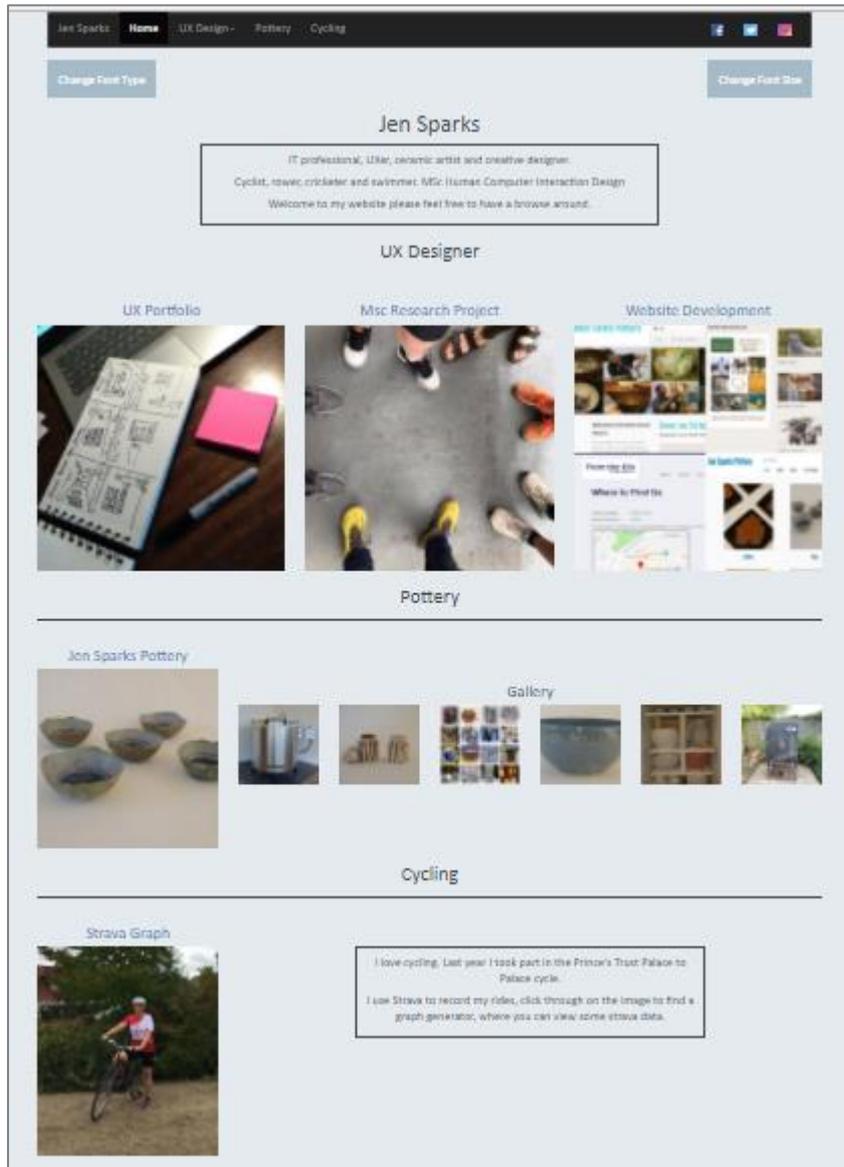
Designing and Implementing a Web Application

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Introduction

I chose to write a website to showcase my UX portfolio. I also included other areas that I am interested in, pottery and cycling. <https://smcse.city.ac.uk/student/acvt674>

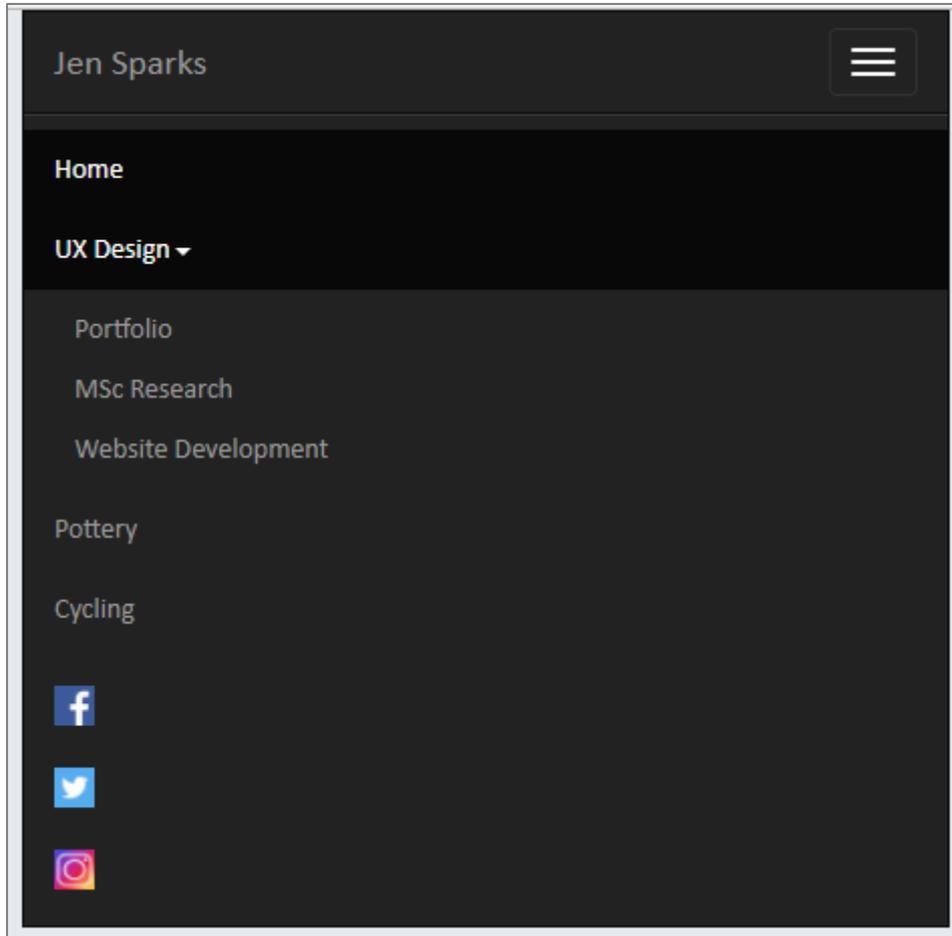


Homepage

Structure and Architecture of the Website

The site is quite simple with only six pages. I used Bootstrap for the layout of the website, which meant that it is responsive. I found Bootstrap had many limitations when trying to apply JavaScript or HTML code to the images within the containers. The main menu also uses Bootstrap, I made a file with the HTML and called it from each page using JavaScript so that I didn't have to repeat the code each time.

Main Menu



Responsive Menu Showing UX Design Drop Down

I used HTML and CSS to create my own drop down menus to adjust the font type and size. The menus are defined as buttons, I used the float command to position them at the sides of the page. I used jQuery to change the font styles for the page using a <DIV> around the Body code.



Font Type Drop Down Menu



Font Size Drop Down Menu

In the HTML I used plenty of <DIV> statements to isolate parts of the DOM so that they could then be manipulated with CSS and/or JavaScript. Where similar styles were required for different objects I used classes. jQuery was used to simplify the code. I included libraries for JavaScript, jQuery, Bootstrap, d3, and Google Fonts.

For the introductory text at the top of each page I created a class so that they could be formatted with a box border in the CSS.



A Class of "introBox" was used to style the top of each page.

The image paths were put in an array and the HTML generated using jQuery. This means that the images can be changed in the variables, without changing the HTML. I also used jQuery 'wrap' to add links to the images.

In my design the images on the home page were meant to have a text overlay, so that it was obvious that they were links. I tried to use the HTML and CSS to achieve this but images inside the Bootstrap framework were disrupted when the code was added. This is due to the 'position' command in the CSS. I succeeded in making the images opaquer when hovered over and put linking text above the images to make it clearer. I tried out HTML for some images and jQuery for others, to change the opacity of the images.



Hover Showing Opacity of the MSc Research Image on the Homepage

I have included a YouTube video on the Pottery page, using iframe.



My original proposal was quite complicated and I ran into problems with the Strava GPX file upload.

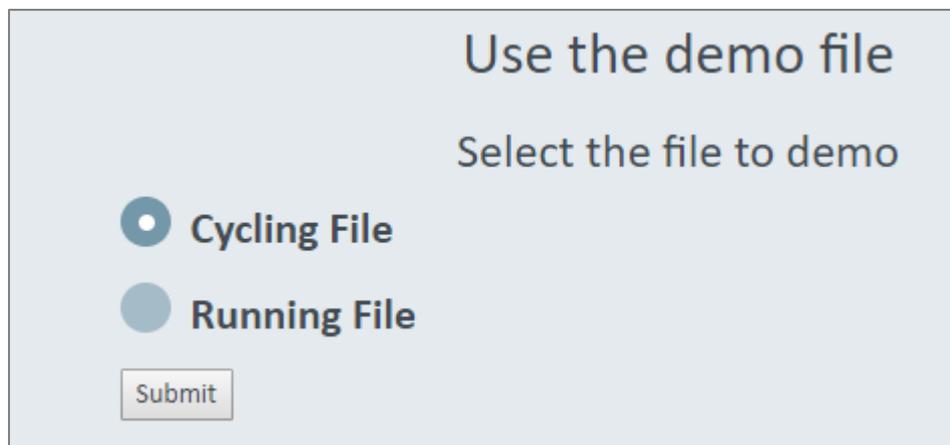
- Cross origin requests on Chrome
- PHP PUSH command was not supported by the Python server I was using locally. I then had a similar problem with XAMPP.
- Received a 'permission denied' error on City University server.

I then decided to use a local file instead of the upload. The GPX file (XML format) was read in and the elevation and time information selected from it. I then tried to load this into a JavaScript array and feed it into the d3 function. I was unable to get d3 to read the array and ran out of time. I have left the code in the file, commented out. The final program reads in a csv file and feeds it into the d3 function. I spent a long time learning about how to read XML files. I felt this was a very worthwhile exercise and I was disappointed that I couldn't implement the solution in the end.

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <gpx creator="StravaGPX Android" version="1.1" xmlns="
  http://www.topografix.com/GPX/1/1" xmlns:xsi="
  http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="
  http://www.topografix.com/GPX/1/1
  http://www.topografix.com/GPX/1/1/gpx.xsd">
3 <metadata>
4   <time>2015-05-04T09:08:08Z</time>
5 </metadata>
6 <trk>
7   <name>Morning Run</name>
8   <trkseg>
9     <trkpt lat="51.5224590" lon="-0.7522600">
10      <ele>48.5</ele>
11      <time>2015-05-04T09:08:08Z</time>
12    </trkpt>
13    <trkpt lat="51.5224950" lon="-0.7522760">
14      <ele>48.5</ele>
15      <time>2015-05-04T09:08:11Z</time>
16    </trkpt>
```

XML Formatted GPX file

The final version uses a radio button option to determine which of two csv files to load into the d3 function. I used an event listener in jQuery to trigger the call to the d3 function. I created a line graph using d3 which plotted elevation against time. The d3 data was loaded into an SVG, which had to be cleared before the next graph was loaded.



Radio Button to Select Which File to Use

Functionality

Navigation around the website is provided mainly by the main menu but I also allowed pages to be linked from images further down the homepage. The links to the social media sites were set up to open in new windows using the target = "_blank" command. Other functionality included generating the d3 graph from data. As the GPX file is held in XML format I could have tried to read it into the d3 function. I wasn't aware that this was possible and wrote code to manipulate the XML data, put it

into an array and feed it into d3. To just select the time part of the time element the jQuery slice method was used. So '<time>2015-05-04T09:08:08Z</time>' was truncated to '09:08:08'. The elevation graph is available on the Strava website so my version is unlikely to be used by anyone.

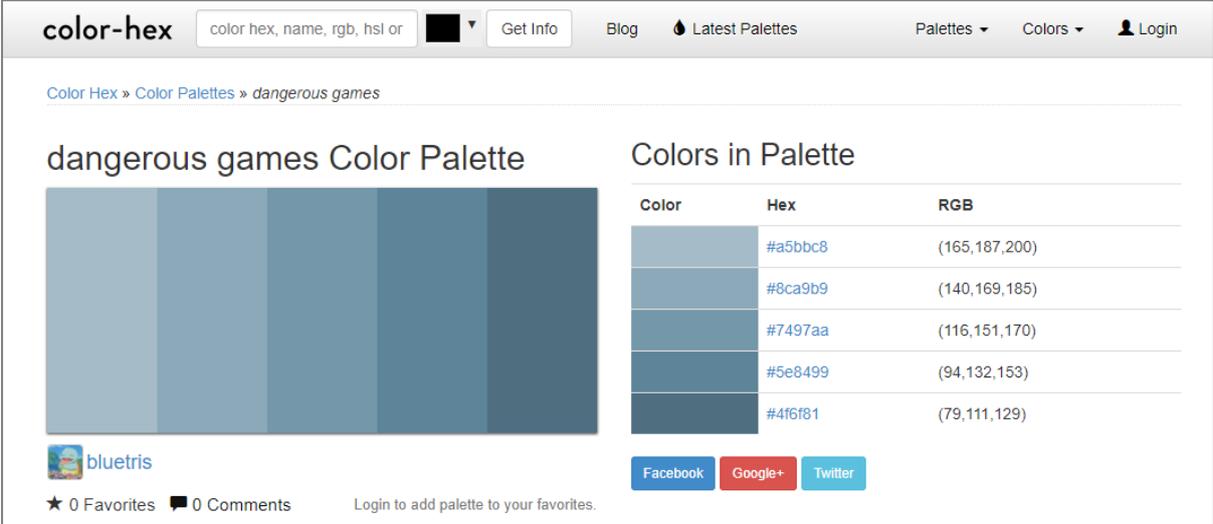
To improve the functionality of the site I would add the following

- gallery link for the pottery images
- blog
- make the SVG responsive
- data visualisation on the cycling page that is not available on the Strava site
- footer

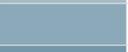
User Experience

I spent too much time on the data visualisation of my website and felt that I neglected the UX aspects. However, I feel that I have created an easy to use website with a clean and simple look. I used a colour scheme from <http://www.color-hex.com/color-palette/58551>.

This gives the site consistency across the pages but I wasn't happy with the final colours as they are quite boring and old fashioned!



The screenshot shows the 'color-hex' website interface. At the top, there is a search bar with the text 'color hex, name, rgb, hsl or' and a dropdown arrow. To the right of the search bar are links for 'Get Info', 'Blog', 'Latest Palettes', 'Palettes', 'Colors', and 'Login'. Below the search bar, the breadcrumb trail reads 'Color Hex » Color Palettes » dangerous games'. The main content area is titled 'dangerous games Color Palette' and features a horizontal bar with five color swatches in shades of blue and grey. To the right of the color bar is a table titled 'Colors in Palette' with three columns: 'Color', 'Hex', and 'RGB'. The table contains five rows of color data. Below the color bar, there is a 'bluetris' logo, '0 Favorites', '0 Comments', and a 'Login to add palette to your favorites.' link. At the bottom of the color bar, there are three social media buttons: 'Facebook', 'Google+', and 'Twitter'.

Color	Hex	RGB
	#a5bbc8	(165,187,200)
	#8ca9b9	(140,169,185)
	#7497aa	(116,151,170)
	#5e8499	(94,132,153)
	#4f6f81	(79,111,129)

I provided grouping of common objects and divided them with horizontal rules.

The hover opacity on the images shows an affordance, indicating a link. Gallery images are smaller and don't change on hover, indicating no link.

I wanted to develop the design further but I ran out of time trying to develop the functionality.