COM601 – Rich Internet Applications

Assignment One – Technical Log

Introduction

The aim of this assignment was to develop a single page application, using the skills that I had learnt throughout the COM601 module. This included the use of interactive features, developed through a combination of HTML5 jQuery, CSS and AJAX (with JSON). My chosen topic for this assignment was Liverpool Football Club. Below, I will discuss each of the features that I incorporated into the website, and briefly explain how each of these were developed.

HTML5 Elements

In terms of the structure of the website, this was built using majority HTML5 elements. This included the use of the HTML5 doctype, and elements such as “section”, “nav”, “header” and “footer”. HTML5 is now widely supported across most browsers, therefore it is something that I am starting to use more and more with each project. Below are a few of the HTML5 elements that I used.

```
<header>
    <div class="row">

        <div class="logo">
            <img src="images/lfc-logo.png" />
        </div>

        <nav>
            <ul class="navbar">
                <li><a href="#home">Home</a></li>
                <li><a href="#team">Team</a></li>
                <li><a href="#honours">Honours</a></li>
                <li><a href="#fixtures">Fixtures</a></li>
            </ul>
        </nav>

    </div>
</header>
```

Live Clock

The first feature that was added to the website was a live clock. This was created using JavaScript. This was done by defining three main variables; one to get the minutes, one to get the hours, and one to get the seconds created this. The JavaScript then gets the local time, and displays it within a set element when the body of the document loads. In this case, I have set the time to appear within a span tag inside the header. Below, you can see the end result.

Navigation Toggle

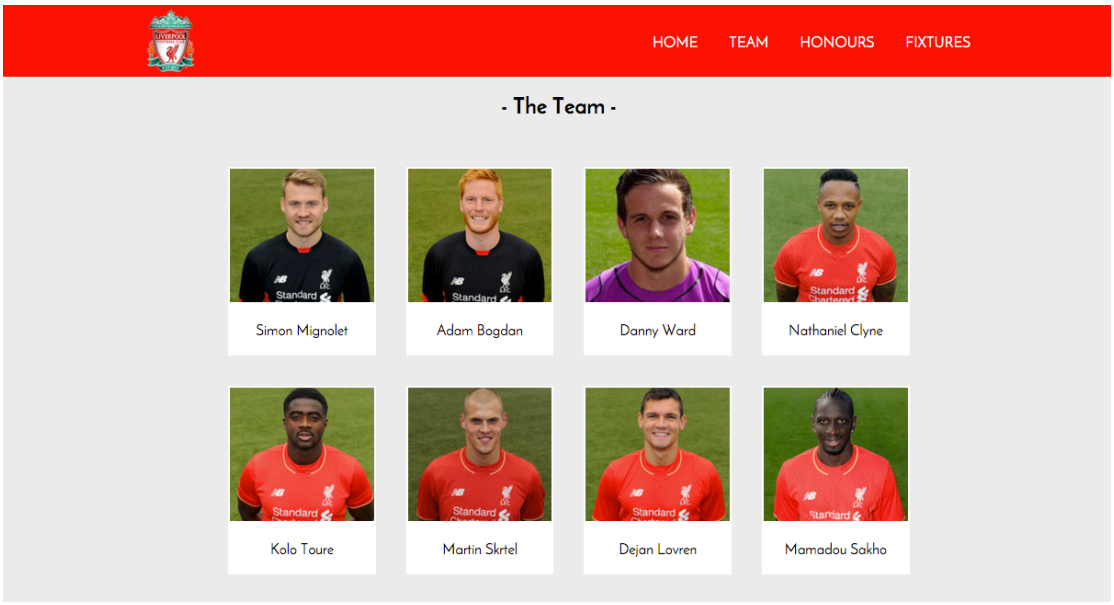
Another feature that I created ensured that the navigation would always be available to the user. This was set up so that once the user scrolled passed a certain stage of the website, the navigation would change and appear fixed to the top of the page. Creating a separate class for the navigation within the css file did this. I then used jQuery to add the class to the 'nav' tag once the user had scrolled further than 400px down the page.

```
// NAV APPEAR ON SCROLL

$(document).ready(function($) {
    $(document).scroll(function(){
        $('header').toggleClass('scrolled', $(this).scrollTop() > 400);
        $('.logo').toggleClass('scrolled', $(this).scrollTop() > 400);

    });
});
```

AJAX load function

The next feature I included used the AJAX load function to load the Liverpool FC team onto the website. This was done by creating a file called 'players.html' that contained all of the players that would be displayed on the main website. I then used the AJAX load function to populate the 'profiles' div on the main page with any content from within the 'players.html' file. This was done using a very short piece of jQuery, but produced a very effective result.

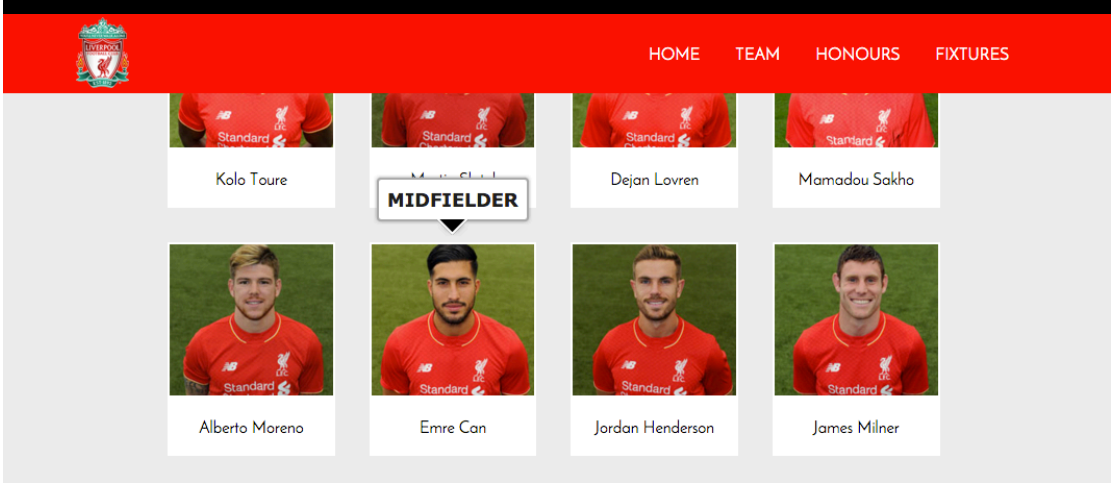
```
// LOAD PLAYERS FROM PLAYERS.HTML

    $(document).ready( function() {
        $( "#profiles" ).load( "players.html #players" );
    });
```



Tooltips

The next feature that I created was tooltips. These were added to the 'Team' section of the website. When the user hovers over a particular player, the tooltip displays the player's position that they play within the team. I have shown an example below. This was created using jQuery UI. This is a great tool that allows you to create several UI features, using a quick and easy method. The jQuery UI website provided the essential code for the tooltips to work, all that I needed to do was state where I wanted them to be placed, and I also had to include a link to the jQuery UI scripts file.


```
<!-- jQuery UI -->
<script src="//code.jquery.com/ui/1.11.4/jquery-ui.js"></script>
<link rel="stylesheet" href="//code.jquery.com/ui/1.11.4/themes/smoothness/jquery-ui.css">
```



Toggle On Click

Another feature that I created was the inclusion of toggle capabilities. This was incorporated into the 'honours' section of the website. I created 5 images, one for each of the trophies that Liverpool FC have won, and the code ensured that once they were clicked, a number would appear underneath that represented the number of times that trophy had been won. An additional feature that I added to this was for the code to run once the respective image was clicked. This was done using the jQuery click function.

```
$("#league img").click(function(e) {
    $("#league p").toggle('size');
    e.preventDefault();
});
```

AJAX with JSON

The next feature that I added was within the 'Upcoming Fixtures' section. This was a feature that allowed the user to select a competition, and it would show them the next upcoming fixture within that competition. This would display the date of the fixture, the opponent, and the location (either home or away).

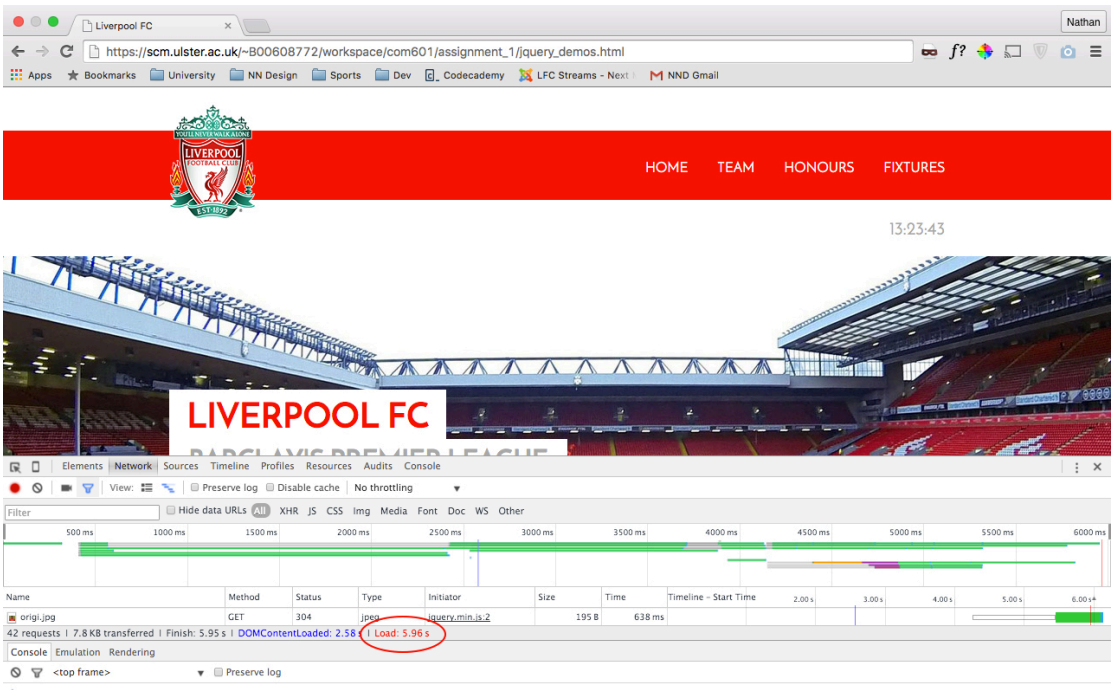
This was created using AJAX with JSON. I created a JSON file that contained all of the information that I needed. I also included the opposition badge, to give it a bit more context. I then used AJAX to pull through the information, and display it in a table on the front end. With the use of CSS, I was then able to style the table to my liking, removing borders and adjusting the spacing.

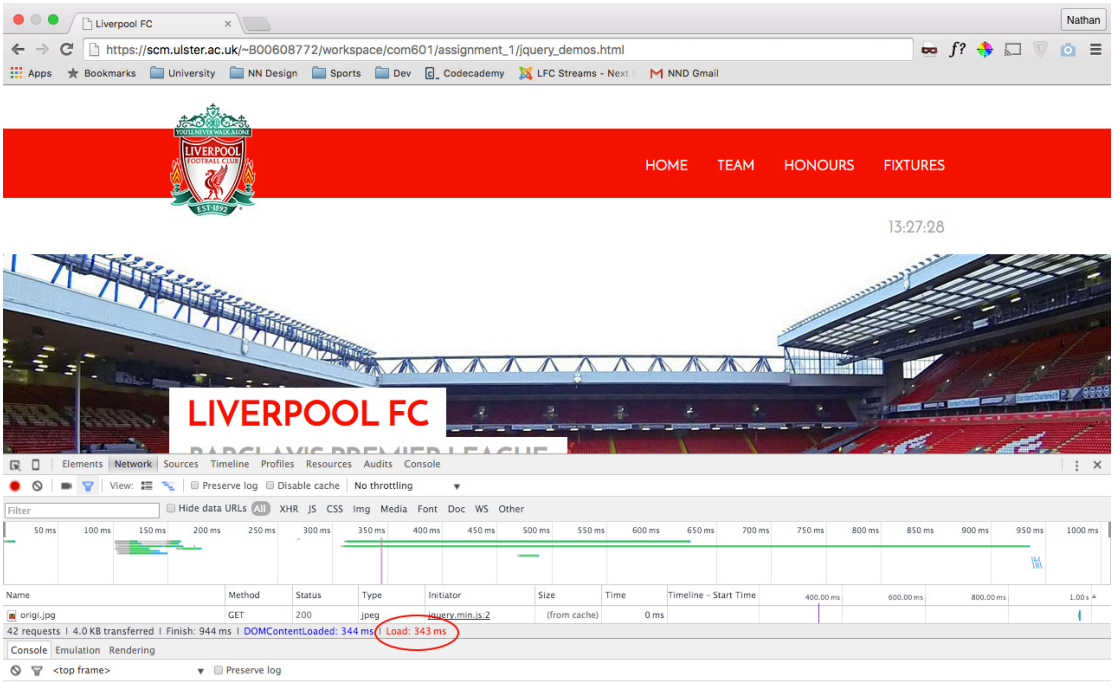
```
{ "fixtures":[
    {
        "Month": "November",
        "Day": "14th",
        "OpponentBadge": "images/fixtures/southampton.png",
        "Opponent": "Southampton",
        "Location": "Home",
        "Competition": "Barclays Premier League"
    },
```

Performance Improvement

The final piece of this assignment was to work on the performance of the website. Initially, I found that the load speed of the page was 5.96 seconds. This was quite a slow load, most likely due to large files. In order to improve this, I relocated my JavaScript files from the head of the HTML document, to the below the footer. This improved performance in itself. As well as this, I then minified both the css and JavaScript files, removing all white space, therefore reducing the file size.

After making these changes, the load speed of the website drastically reduced to just 343ms. This was a major performance improvement, and involved just a small amount of work.




Liverpool FC
Nathan
https://scm.ulster.ac.uk/~B00608772/workspace/com601/assignment_1/jquery_demos.html
Apps
Bookmarks
University
NN Design
Sports
Dev
Codecademy
LFC Streams - Next
NND Gmail
HOME
TEAM
HONOURS
FIXTURES
13:27:28
LIVERPOOL FC
Elements
Network
Sources
Timeline
Profiles
Resources
Audits
Console
Preserve log
Disable cache
No throttling
Filter
Hide data URLs
All
XHR
JS
CSS
Img
Media
Font
Doc
WS
Other
Name
Method
Status
Type
Initiator
Size
Time
Timeline – Start Time
orig.jpg
GET
200
jpeg
jquery.min.js:2
(from cache)
0 ms
42 requests | 4.0 KB transferred | Finish: 944 ms | DOMContentLoaded: 344 ms | Load: 343 ms
Console
Emulation
Rendering
<top frame>
Preserve log