

A Document on the Construction of the Mobile Application

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A DOCUMENT ON THE CONSTRUCTION OF THE MOBILE APPLICATION (JQUERY MOBILE)



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INTRODUCTION

The main objective of this project was to develop a mobile application using jQuery Mobile. More specifically, it was a website that had support for mobile platforms. Three separate pages were required for the project. The project's briefing document also requested the inclusion of several features: The implementation of mobile features like single page application, page transitions, panels, collapsible menus and site styles using CSS (either self-made or using a third-party utility like jQuery ThemeRoller. Some more complicated site mechanics like using AJAX to make calls to a public JSON API which can be used to display data seamlessly was also requested in the project brief. In addition to this, it also requested to make an AJAX call to one's own data too which can also be done using JSON, only this time through a file created dynamically through a database, or through a GET call to the database directly (this can be done through a server-side scripting language like PHP for example).

WHAT IS JQUERY MOBILE?

jQuery Mobile is a user interface system first introduced in 2010 and based upon HTML5 which was developed to make responsive web sites and applications that could be accessed on various devices like smartphones, tablets, laptops as well as traditional desktop devices (chiefly a computer). Based upon the foundations of jQuery UI and jQuery itself, jQuery Mobile offers AJAX navigation with page transitions, touch events, and numerous widgets. Its main draw is its lightweight code which has easily modified theme design.

The program used to put this mobile application together was Microsoft's Visual Studio Code, a much lighter and compact variant of their main Visual Studio program.

PROGRAM OVERVIEW

INDEX PAGE:

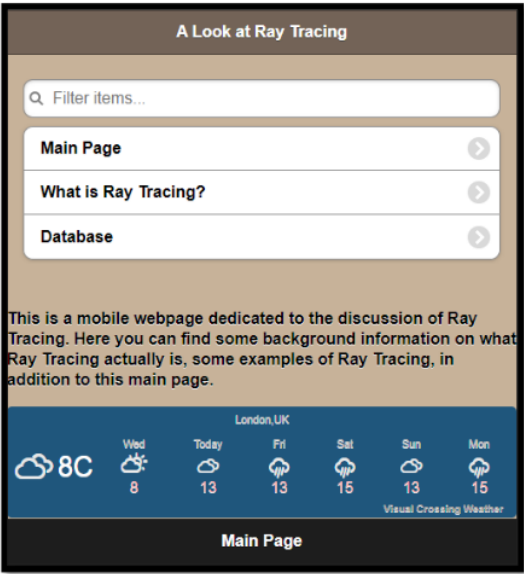
```
1 <!DOCTYPE html>
2 <html>
3
4 <head>
5   <link rel = "stylesheet" href = "http://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.css"/> <!-- .css styling -->
6   <link rel = "stylesheet" href = "theme.css"/> <!-- Theming file -->
7   <link rel = "stylesheet" href = "jquery.mobile.icons.min.css"/> <!-- .css file used for the application's icons -->
8   <script src = "http://code.jquery.com/jquery-1.11.1.min.js"/></script> <!-- jQuery scripting -->
9   <script src = "http://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.js"/></script> <!-- jQuery Mobile scripting -->
10 </head>
11
12 <body>
13   <div data-role = "page" id = "HomePage">
14
15     <div data-role = "header">
16       <h1>A Look at Ray Tracing</h1>
17     </div>
18
19     <div data-role = "content"> <!-- Menu Options -->
20       <ul data-role = "listview" data-inset = "true" data-filter = "true">
21         <li><a data-transition = "slide" href = "index.html"> Main Page</a></li>
22         <li><a data-transition = "slide" href = "page2.html"> What is Ray Tracing?</a></li>
23         <li><a data-transition = "slide" href = "page3.html"> Database</a></li>
24       </ul>
25     </div>
26
27     <div data-role = "footer" data-position = "fixed" data-theme = "b">
28       <h2>Main Page</h2> <!-- Footer title showing page title -->
29     </div>
30
31     <p><b>This is a mobile webpage dedicated to the discussion of Ray Tracing.
32     Here you can find some background information on what Ray Tracing actually is,
33     some examples of Ray Tracing, in addition to this main page.</b></p>
34
35     <footer>
36       <div class="weatherWidget" ></div>
37     </footer>
38
39     <script> //Scripting for Weather Widget
40     window.weatherWidgetConfig = window.weatherWidgetConfig || [];
41     window.weatherWidgetConfig.push
42     (
43       {
44         selector:".weatherWidget",
45         apiKey:"TfNBGLA9H4FV87ZKYNASMS8T", //API key used to source weather information
46         location:"London, UK", //Address of weather
47         unitGroup:"metric", //"/us" or "metric"
48         forecastDays:5, //how many days forecast to show
49         title:"London,UK", //optional title to show in the
50         showTitle:true,
51         showConditions:true
52       }
53     );
54     (function()
55     {
56       var d = document, s = d.createElement('script');
57       s.src = 'https://www.visualcrossing.com/widgets/forecast-simple/weather-forecast-widget-simple.js';
58       s.setAttribute('data-timestamp', +new Date());
59       (d.head || d.body).appendChild(s);
60     })();
61   </script>
62 </body>
63 </html>
```

The stylesheets for CSS are found here as well as the JS scripting.

The code/scripting Weather API is found here.

The main page of the website/mobile application. Here, the features like the Weather API are hosted (the coding snippet can be seen in the second screenshot above) but here is where users will get their first proper look at the menu system put in place thanks to the use for ThemeRoller. Here the search function can be found, with the menu items displayed just below that. Clicking on those transports the user to the other pages using a rather nice-looking transition effect which makes the whole affair appear seamless. The results can be seen in the screenshot below. In order to implement the weather API, an API key was required from an external website (<https://www.visualcrossing.com/weather/weather-data-services#/login>) which required an account

to be made to obtain but as soon as this was retrieved, it was just a case of using it in the code above to successfully display a real-time weather API in the program.

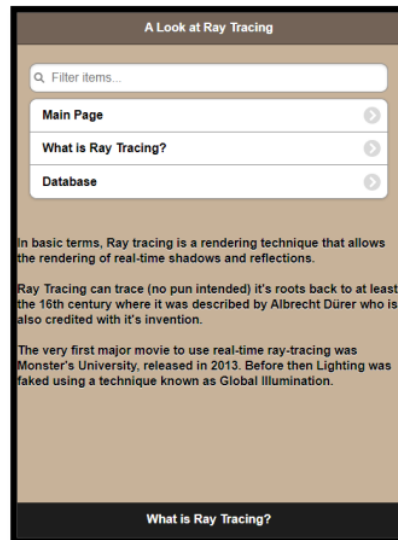


The Weather API can be seen in the screenshot displayed to the side here.

PAGE 2:

```
1 <!DOCTYPE html>
2 <html>
3
4 <head>
5   <link rel="stylesheet" href="http://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.css"/>
6   <link rel="stylesheet" href="jquery.mobile.icons.min.css"/>
7   <link rel="stylesheet" href="theme.css"/>
8   <script src="http://code.jquery.com/jquery-1.11.1.min.js"></script>
9   <script src="http://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.js"></script>
10 </head>
11
12 <body>
13   <div data-role="page" id="HomePage">
14
15     <div data-role="header">
16       <h1>A Look at Ray Tracing</h1>
17     </div>
18
19     <div data-role="content">
20       <ul data-role="listview" data-inset="true" data-filter="true">
21         <li><a data-transition="slide" href="index.html"> Main Page</a></li>
22         <li><a data-transition="slide" href="page2.html"> What is Ray Tracing?</a></li>
23         <li><a data-transition="slide" href="page3.html"> Database</a></li>
24       </ul>
25     </div>
26
27     <div data-role="footer" data-position="fixed" data-theme="b">
28       <h2>What is Ray Tracing?</h2>
29     </div>
30
31     <p><b>In basic terms, Ray tracing is a rendering technique that allows <!-- Information for page is put here in the code -->
32 the rendering of real-time shadows and reflections.
33 <br>
34 <br>
35 Ray Tracing can trace (no pun intended) it's roots back to at
36 least the 16th century where it was described by Albrecht Dürer
37 who is also credited with it's invention.
38 <br>
39 <br>
40 The very first major movie to use real-time ray-tracing was
41 Monster's University, released in 2013. Before then Lighting
42 was faked using a technique known as Global Illumination.</b></p>
43 </body>
44 </html>
```

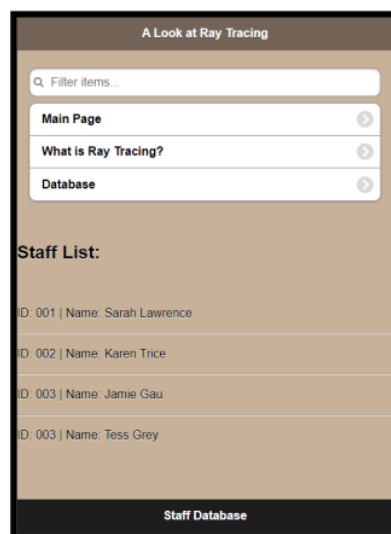
The code displayed above is for the second page. This page is quite disposable in the grand scheme of things as it was only provided to fulfil the 3-page quota required in the brief but some content regarding the topic of Ray Tracing was provided here alongside the usual theming used from ThemeRoller and the CSS styling sheets.



PAGE 3:

```
1 <!DOCTYPE html>
2 <html>
3
4 <head>
5   <link rel = "stylesheet" href = "http://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.css"/> <!-- -->
6   <link rel = "stylesheet" href = "jquery.mobile.icons.min.css"/>
7   <link rel = "stylesheet" href = "theme.css"/>
8   <script src = "http://code.jquery.com/jquery-1.11.1.min.js"/></script>
9   <script src = "http://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.js"/></script>
10
11 </head>
12
13 <body>
14   <div data-role = "page" id = "HomePage">
15
16     <div data-role = "header">
17       <h1>A Look at Ray Tracing</h1>
18     </div>
19
20     <div data-role = "content">
21       <ul data-role = "listview" data-inset = "true" data-filter = "true">
22         <li><a data-transition = "slide" href = "index.html"> Main Page</a></li>
23         <li><a data-transition = "slide" href = "page2.html"> What is Ray Tracing?</a></li>
24         <li><a data-transition = "slide" href = "page3.html"> Database</a></li>
25       </ul>
26     </div>
27
28     <div data-role = "footer" data-position = "fixed" data-theme = "b">
29       <h2>Staff Database</h2>
30     </div>
31
32     <script language = "javascript" //javascript (utilising 3500) is used here to implement the database
33       var person1 = { "ID": "001", "firstname": "Sarah", "surname": "Lawrence" }; //Staff entries
34       var person2 = { "ID": "002", "firstname": "Karen", "surname": "Trice" };
35       var person3 = { "ID": "003", "firstname": "Jamie", "surname": "Gau" };
36       var person4 = { "ID": "003", "firstname": "Tess", "surname": "Grey" };
37
38       document.write("<h2>Staff List:</h2>");
39       document.write("<br>");
40       document.write("<p>ID: " + person1.ID + " | Name: " + person1.firstname + " " + person1.surname); //Formatting into the database
41       document.write("<br />");
42       document.write("<p>ID: " + person2.ID + " | Name: " + person2.firstname + " " + person2.surname);
43       document.write("<br />");
44       document.write("<p>ID: " + person3.ID + " | Name: " + person3.firstname + " " + person3.surname);
45       document.write("<br />");
46       document.write("<p>ID: " + person4.ID + " | Name: " + person4.firstname + " " + person4.surname);
47     </script>
48   </body>
49 </html>
```

The third webpage of the mobile application featured a database that was displayed using AJAX making a call to data provided in the HTML file under JS. The inputting of the data can be seen above with the finished result being displayed below. It's rather primitive and could potentially be improved with some styling from CSS but for now it gets the job done.



CONCLUSION

In conclusion, the construction of this mobile application has been relatively successful, if a bit primitive perhaps. It mostly packs the features and content that the brief requires but the mobile application itself is very barebones and has been made to simply showcase the features of AJAX, CSS styling (through the use of ThemeRoller), the use of JSON API and so forth. Perhaps more time could be put into the project next time to properly plan out and flesh out the ideas so that the mobile application can be a more interesting site as a result as what is on display right now comes off as very barebones and downright boring.

A Document on the Construction of the Mobile Application

GRADEMARK REPORT

FINAL GRADE

GENERAL COMMENTS

Instructor

42/100

PAGE 1

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PAGE 8

GRADING FORM: ASSIGNMENT2

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COGNITIVE/INTELLECTUAL

Analysis of the technical development of the application (eg how does your Javascript interact with the JSON file?) Why did you take the approach you did?



The report offers an attempt at critical evaluation and analysis of concepts and principles, tending towards description. The student has provided very little evidence explaining how the JavaScript interacts with the JSON files or why they choose the approach they took.

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KNOWLEDGE AND UNDERSTANDING

Annotated code listing (a code listing of relevant sections clearly commented is sufficient)



The code is suitable and demonstrates adequate knowledge and critical understanding of the well-established concepts and principles of web and mobile technologies, with a few gaps in the selection of material.

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PRACTICAL SKILLS



The website contains the following requirements of the assignment: Created a 3 page site with limited navigation and demonstrated mobile features. Implemented a customised style. Made a AJAX call to a local JSON file (Own data) as well as an AJAX call to a public JSON API . The site is readable, with navigation and layout appropriate to the site. The practical work shows a basic application of knowledge and understanding; however the website is a little simplistic and has limited interactivity. The lack of a clear navigation bar/panel makes the website difficult to use.

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