**Web application development**

**Professor: Dr. Muhammad Iqbal**

**CA 3**

**Rich internet application**

**by**

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We have been tasked to develop a rich internet application which will incorporate all elements of the modern rich internet application (RIA) to showcase the inevitable transition from the standard web pages. The RIA should contain the following:

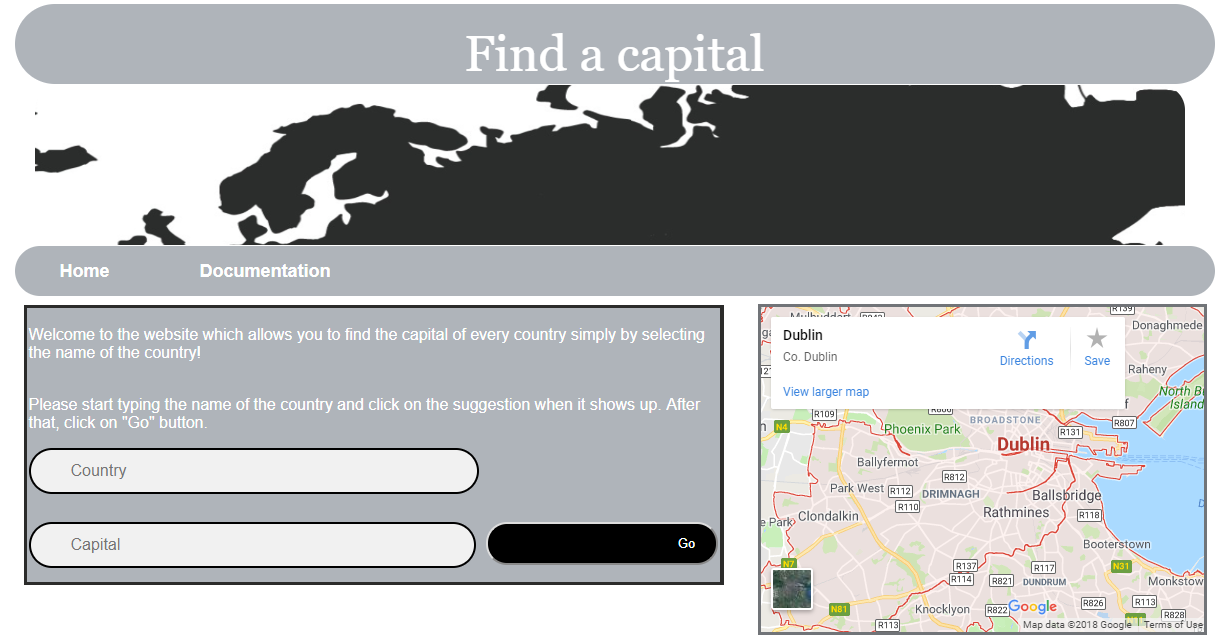
- Client side scripting

- Server side scripting

- Data manipulation

Based on the given description, I have developed a RIA using HTML, CSS, Javascript, JSON, Google map API and PHP to fulfil all of the requirements stated above.

The RIA has a function to display the capital city of every country in the world and show the interactive map of the city on the side.

The end user can type the name of the country in the input field and based on the letters typed, he or she will be presented with a suggested list of countries starting with what was typed. Upon selecting one of them, user clicks on a “Go” button which then populates the field below showing the capital city of the selected country and the map of that city on the side. The user can also click on the “Documentation” button which will show the functions, programming languages, processes, location and the author of all the code used to complete this project. 

Short breakdown of the functionality

Javascript :

Used for the displaying suggestions to the user, processing the form and displaying the results on the index page

HTML:

Used for page markup

JSON:

Used to store the information about the functionality in the “Documentation” page

PHP:

Used to display the data from a JSON file to the end user

CSS:

Used to enhance graphic interface for the user

Google API:

Used to display the location on the embedded map

Starting from the beginning, the HTML markup was used to create a DOM which determined the basic look and the functionality of the index page.

In the “head” section of the website, the CSS style sheet was referenced as well as the document’s source. Underneath under “meta” tag, we have encoding declaration below which we can find Javascript declaration and source as well as title. In the body section, the CSS id is included to apply the CSS look to the “div” segment. Underneath, we have a “header” for displaying a title and a “canvas” tag for slideshow below which we can find 2 buttons – for home and documentation page. Down below, we can find “article” and “section” tags within which we can find a paragraphs with instructions. Below the paragraphs, “form” tag is indicating the begging of the form which will be sent for validation after the input fields have been filled. After the fields have been filled out, the is a submit button with a title “Go” next to it which will submit the form to a javascript function which will return the result in the input field below and also display the map of the capital city of the selected country on the embedded Google map on the right hand side of the screen. Since the Google made some changed to their API and as of recently, usage of API is no longer free. As a result of that, I’ve made an array in javascript which holds the direct URL source values for every capital city in the world. When the user starts typing the name of the country, javascript finds all the countries matching typed letters in the array. When user selects the wanted country and clicks on the button, javascript function is triggered. That function goes through the array and searches whether the user input can be found in the array. If the answer is yes, the javascript will take the value from the index fields in that array and send it back to DOM to update the second input field containing the name of the capital city as well as the source for the embedded map on the side. If the user wants to view the functions behind that, he can click on the “Documentation” button which will bring him to a page where the PHP will read all the elements from a JSON file and display them on a page. These details will contain the basic information about the functions.

On the right hand side form that the user will be able to see a brief description of the application and what it does.

The user can go back to previous page any time e or she desires by simply pressing the “Home” button located under the banner animation.

I have selected to work with the javascript as it is very versatile language and plenty of functionalities can easily be achieved on the client side. The functions can easily be invoked by different events, which allowed me to incorporate some really visually pleasing effects.

The main reason why I have selected to work with PHP and JSON is the following;

The information which I wanted to display is in a simple text format so the PHP seemed like a logical choice here compared to node.js and ajax. The JSON file was used since it is formatted really well and the user can see all the information clearly without the extensive markup in the document. For this reason, JSON was my choice over the XML.

The application is hosted on Paizacloud since codeanywhere allows usage only up to 2 hours per day.

Around half of the javascript code was taken from the website w3schools.com while the other half was written by myself.

The JSON, PHP, HTML and CSS files were created by myself.

All the code taken from a 3rd party was referenced in the “Documentation” page.

Links:

Piazacloud

<https://1kruno-1.paiza-user.cloud/~ubuntu/index.php>

Github

<https://github.com/1Kruno/WAD-API>