INFS3202/7202 Practical 5 –AJAX and JSON

(6 marks)

Overview and objectives

Recall the search function implemented in Prac 4. Each search query required a page refresh. In Prac 5 you are required to use AJAX to improve it with a dynamic display of search results. Additionally, you will be working further with the Google APIs to load in restaurant data dynamically. Furthermore, you are required to implement a simple comment system, which augments the API functionality and allows users to interact with the information presented.

You should be working on this practical in Week **10** and present the results to your Lab tutor during your scheduled Lab session in Week **12**, beginning the **25**/5/2015. The Prac could be done either in the Lab or at home but it should be deployed to the working zone. You must also **upload** your code that you have shown to the tutor to Blackboard by 6pm on the day of your Prac session.

This practical exercise is divided into three major tasks:

- Dynamic restaurant data using Google Places API (2 marks);
- Make results interactive (2 marks);
- Implement comments functionality (2 marks);

Preparation

Before attempting this practical you should have a good working knowledge of HTML, JavaScript, AJAX, JSON, PHP, JSP as well as SQL and databases. Please ensure that you have covered the material in Lectures 1-7. You can choose either JSP or PHP for Prac 5.

The following are some resources that may be useful for understanding AJAX & JSON:

https://developer.mozilla.org/en/docs/AJAX
http://www.w3schools.com/Ajax/ajax_intro.asp
https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global_Objects/JSON/parse

As a reminder you should place any HTML, PHP and JSP files in the dedicated directory of your personal web server (zone): **/var/www/htdocs/**

For the zones there is a copy of phpmyadmin already provided in your **/var/www/htdocs/** folder. If you visit **http://infs3202-xxx.uqcloud.net/phpmyadmin** (where xxx is specific to you) you can access this. The login to the mysql server (and thus to phpmyadmin) is the zone's name as the username (e.g., infs3202-xxx) and you will need to contact your tutor for root password.

Task 1 (2 Marks): Dynamic Restaurant data using Google Places API

Quite often in a web information system you will have to work with data from external sources. One common method of doing this in the context of a web application (such as your MyRestaurants website), is using AJAX to request JSON data from an API.

This process requires an understanding of the division between the client, server and external services; and will test a lot of the core skills required for implementing your own applications.

For this first task, you must use the Google Places API to request data for restaurants near the initial centre point of your map. If you are working from earlier pracs this will be a location determined using the HTML5 Geolocation API representing the current location of the user.

Use this API to request a small number of the closest restaurants to the centre point of your map and use the returned data to populate the restaurants list on your page. Additionally, use this data to place markers on the map which correlate to the restaurants in the list.

Marks Breakdown (2 marks total):

- Request data from the Google Places JavaScript API (0.5 marks)
- Make your request to the Google Places API using data from the current state of the map, not manually typed location data (0.5 marks)
- Update your restaurant list using the data (1 mark)

Task 2 (2 marks): Make Results Interactive

Now that you have a list of nearby restaurants, it would be useful to the user if you could search for specific types of restaurants. Link the search box you created in earlier pracs to your Google Places API request to filter results using the input provided by the user. For example, if the user searches for "pizza", the restaurants in the list should show places associated with pizza.

Additionally, it would be useful to the user if the restaurants shown followed the area of the map they are looking at. Make your restaurant list update to show restaurants only surrounding the centre of the visible map. Sort the restaurant list by distance.

Marks Breakdown (2 marks total):

- Search bar content affects restaurant list and map markers (0.5 marks)
- Restaurants shown are sorted by distance relative to the centre of the map (0.5 marks)
- Panning the map adjusts the results to show restaurants close to the centre (1 mark)

Task 3 (2 marks): Implement Comments

When working with APIs, you will not always have access to all the information you need. Sometimes you will need to create your own functionality that works alongside existing API data. For this task you will need to modify your database and website to allow users to comment on the individual restaurant pages.

These user comments should be stored in your own SQL database. As you don't have a pre-existing list of all the restaurants the users might see on the website, you will have to find some way to uniquely identify each restaurant which will allow you to link comments to each place in your database.

These comments should be updated using an AJAX request.

Marks Breakdown (2 marks total):

- Existing comments in database shown for each individual restaurant(0.5 marks)
- New comments are added to the database using AJAX (1 mark)
- New comments are placed on the page without refresh (0.5 marks)