Web Mashup: Display Best Restaurants on a Map

Description

The goal of this project is to create a web mashup that combines two web services: Google Maps and the Yelp API for Developers, using JavaScript and AJAX. After you center your Google Map to a geographical area and enter some terms, such as "Indian Restaurant", your application will find the best matches (eg, the best Indian restaurants) inside you map area, it will mark their location on the map, and will display some information about these restaurants on the web page.

Platform

As in Project #2, you will develop this project on your PC/laptop using XAMPP and you will test it using using your Mozilla Firefox web browser. Download [project3.zip](https://uta.instructure.com/courses/57979/files/10075156/download) and unzip it inside your web server document root directory. The project3 directory contains 3 files: proxy.php, yelp.html, and yelp.js. All the web service requests to yelp.com should go through the proxy.php. See the example in yelp.js. Your project is to edit yelp.html and yelp.js as described in the description of the web application.

Web Services used by the Web Mashup

For this project, you will use the

* [Yelp Fusion API (v3.0) (Links to an external site.)](https://www.yelp.com/fusion) from [Yelp (Links to an external site.)](http://www.yelp.com/) (more specifically, the [Search API (Links to an external site.)](https://www.yelp.com/developers/documentation/v3/business_search))
* [Google Maps JavaScript API V3 (Links to an external site.)](https://developers.google.com/maps/documentation/javascript/tutorial)
* [Google Map Markers (Links to an external site.)](https://developers.google.com/maps/documentation/javascript/markers)

First, you need to get API keys for both Google maps and Yelp:

* To use Google maps, you need to get a Google API key. See [directions  (Links to an external site.)](https://developers.google.com/maps/documentation/javascript/get-api-key). You will need to register and provide a credit card number. Your credit card will not be charged as long as you make less than 28000 calls to the Map API in a month. You should disable this account at the end of the semester so that there are no accidental charges.
* To use the Yelp Fusion API (v3), you need to register and get an API key at the [Yelp API page (Links to an external site.)](https://www.yelp.com/fusion). It's free. After you register, you go to [Fusion API (Links to an external site.)](https://www.yelp.com/developers/documentation/v3) and then "Manage App" and you click on "Generate new API key" from the Yelp API site. You cut-and-paste the API key into your proxy.php, and you test your setup on your web browser by using [http://localhost/project3/yelp.html (Links to an external site.)](http://localhost/project3/yelp.html) and by pushing the Find button. It will display the the top 5 Indian restaurants in Arlington in JSON format. If you don't get anything, try this on your browser: [http://localhost/project3/proxy.php?term=indian+restaurant&location=Arlington+Texas&limit=5 (Links to an external site.)](http://localhost/project3/proxy.php?term=indian+restaurant&location=Arlington+Texas&limit=5). If it gives an empty page, your Yelp API must be wrong. Get a new one.

Project Description

You need to edit the HTML file yelp.html and the JavaScript file yelp.js. Your HTML web page must have 3 sections:

1. a search text area to put search terms with a button "Find"
2. a Google map of size 600\*500 pixels, initially centered at (32.75, -97.13) with zoom level 16
3. a text display area

When you write some search terms in the search text area, say "Indian buffet", it will find the 10 best restaurants in the map area that match the search terms. They may be less than 10 (including zero) sometimes. The map will display the location of these restaurants as map overlay markers with labels from 1 to 10. The text display area will display various information about these restaurants. It will be an ordered list from 1 to 10 that correspond to the best 10 matches. Each list item in the display area will include the following information about the restaurant: the image "image\_url", the "name" as a clickable "url" to the Yelp page of this restaurant, and the rating (a number between 1-5). When you search for new terms, it will clear the display area and all the map overlay markers, and will create new ones based on the new search.

* How do you find the latitude and longitude of a restaurant to put an overlay marker on the map? Each restaurant returned by Yelp has a "coordinate" which contains a "latitude" and a "longitude".
* How do you tell Yelp to search only on the displayed map? You set the latitude, longitude, and radius on your Yelp search, which can be derived from the map bounding box from the Google Map. You can get the bounding box of the map using the [getBounds (Links to an external site.)](https://developers.google.com/maps/documentation/javascript/reference/map" \l "Map.getBounds" \t "_blank) method (it returns 4 numbers).

Note that everything should be done asynchronously and your web page should never be redrawn completely. You need only one XMLHttpRequest object for sending a request to Yelp, since Google Maps is already asynchronous. You should not use any JavaScript library, such as JQuery.

What to Submit

Zip your project3 directory and submit the project3.zip file.

Goal:

Web mashup should first set the location on the map

Then find the results for the search keyword which has been input, should be within the location set

Print the top 10 search results for that location.

YELP FUSION API KEY:

We query yelp to get the top 10 search results for any input in particular location, in order to do that we need to get yelp access key.

Create yelp app so that it automatically generates API key required to access the yelp webservice.

Client ID

VFyBiK\_doxZjIISMMTlXMA

API Key

j4h8sUufQeAK4A3FuMfSbCV2\_KSkwL2oiszoh8e5mgRY0qpkT-9X2wqx9YU3tcifFyBT98iESWVWHHJmeni8s\_x6XlL7JqxwOjhcPddicYk0HrTnv6\_Rx9p8jPiFX3Yx

Paste this API key into the proxy.PHP file

Graphical user interface, text, application, email

Description automatically generated

Check if the connection to yelp webservice was successful by clicking the find button, which gives the top 5 Indian restaurants in Arlington (default location set)

Here is the EXAMPLE yelp API

<http://localhost/web_mashup/proxy.php?term=indian+restaurant&location=Arlington+Texas&limit=5>

In the above API, we need to pass both search term and the location

Google API key:

MAP class methods, events etc. are listed here:

<https://developers.google.com/maps/documentation/javascript/reference/map#Map.getBounds>

go to below path and create project and go to credentials and click on create credentials🡪API key

[**https://developers.google.com/maps/documentation/javascript/get-api-key**](https://developers.google.com/maps/documentation/javascript/get-api-key)

**API key created:** Use this key in your application by passing it with the key=API\_KEY parameter.

Graphical user interface, text, application

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Key enabled and billing is added:

<https://console.cloud.google.com/billing/projects?folder=&organizationId=>

Graphical user interface, application, Teams

Description automatically generated

<https://console.cloud.google.com/google/maps-apis/api-list?folder=&organizationId=&project=web-mashup-777&supportedpurview=project>

Graphical user interface, application

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