Spatial Analysis and Visualization Initiative

SAVI TUTORIAL:
Customize the Google Maps API v3

Allen Spector, March 2014

Summary	This tutorial describes how to customize Google Maps using an API. This allows you to create stylized interactive maps to match your project theme.
Skills required	Basic HTML, CSS, and Java Script
Software	Internet Browser, Adobe Dreamweaver (or a Text Editor and an FTP program)
Sample data	SAVI Spatial Data Library\Tutorials and Resources\Geocoding
Online Demo	http://allenspector.com/map/

Start Here:

Learning how to use and customize the Google API v3 can be overwhelming at first. A good way to begin is to watch this tutorial produced by Google, starring Mano Marks:

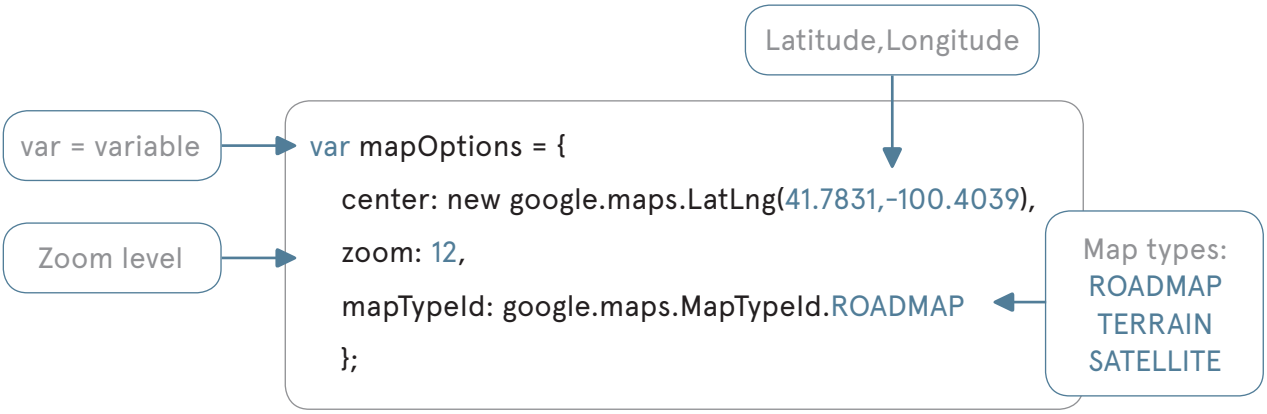
http://youtu.be/ZE8ODPL2VPI

Mano explains how to add markers and an info window to a Google map. Here are the lesson files that he mentions:

http://gmap-tutorial-101.appspot.com/mapsapi101/toc

In the 'Your first map' section of the tutorial, notice how the HTML, CSS, and JS call a map of San Francisco. Experiment by changing the latitude and longitude coordinates on the sample project and click 'run'.

Lets look at the JS code:



Generate your own LatLng coordinates:

The new version of Google Maps has the longitude and latitude coordinates built into the URL.

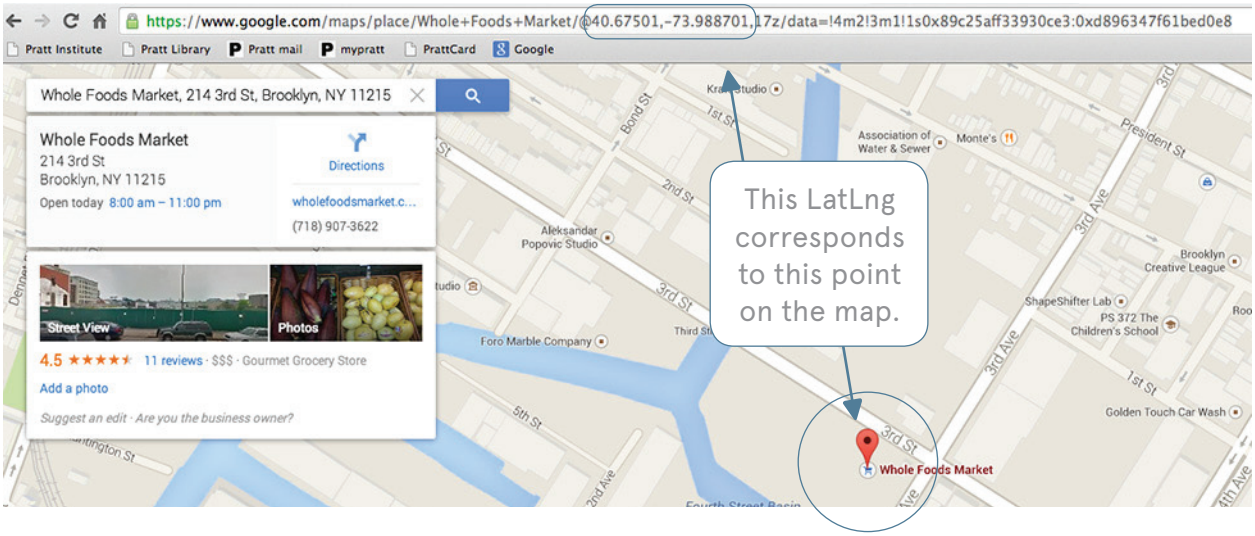
Go to: https://www.google.com/maps

Enter "Whole Foods Market, 214 3rd St, Brooklyn, NY 11215" into the search bar.

In the URL window of the browser you'll see the longitude and latitude coordinates after the @ sign. They are 40.6751358,-73.9885865. The other info in the URL bar indicates the zoom. In this case it's "17z"

You can use Google Maps to find the longitude and latitude coordinates of places where you want to add a marker. I've discovered a work-around where I take a corner of a post-it note and place it on my screen on the Whole Foods marker. I can click and drag the mouse to position the map to a new location, staying at the same zoom level. Then I copy the coordinates of the new location, as indicated by the post-it note, from the URL window.

Use the longitude and latitude coordinates as variables to place markers on your map.



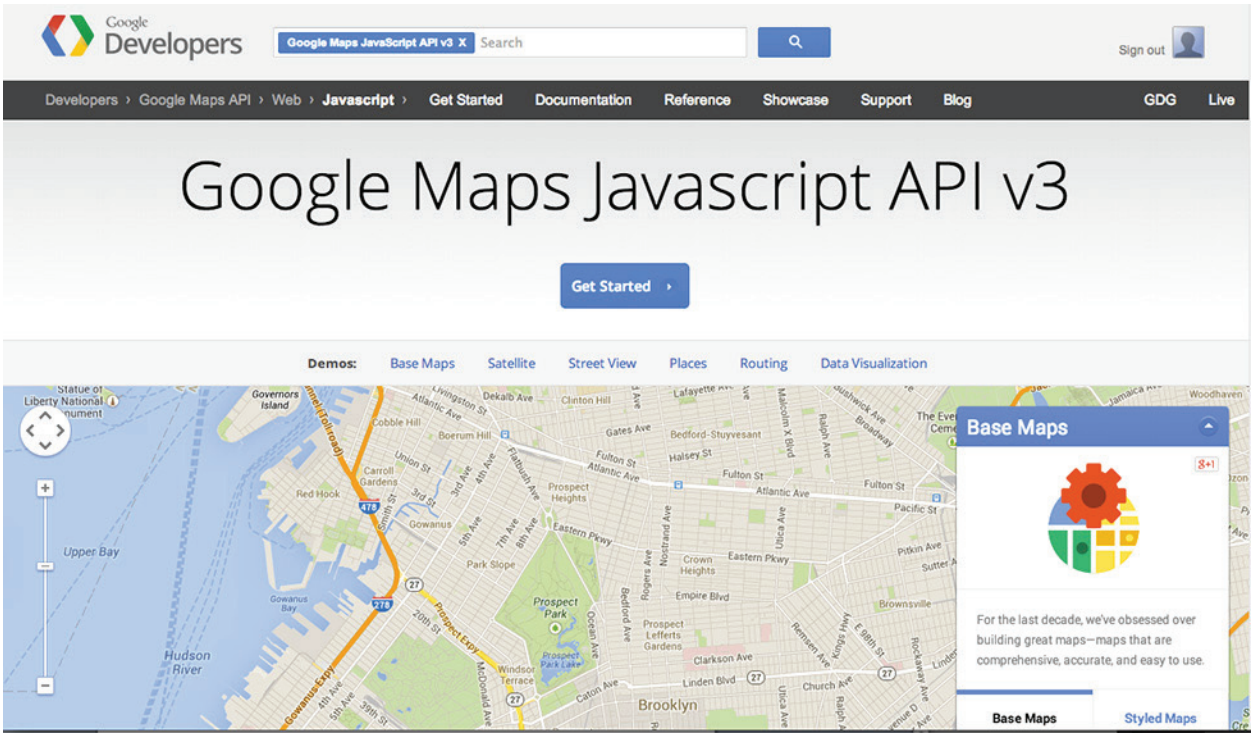
Here is an example of code for a Google Map of Alcatraz Island with the HTML, CSS, and JS all together:

```
<html>
 <head>
  <title>Simple Map of Alcatraz</title>
  <meta name="viewport" content="initial-scale=1.0, user-scalable=no">
  <meta charset="utf-8">

<style>
    html, body, #map-canvas {
      height: 100%;
      margin: 0px;
      padding: 0px
    }
  </style>

<script src="https://maps.googleapis.com/maps/api/js?v=3.exp&sensor=false">
</script>

<script>
var map;
function initialize() {
 var mapOptions = {
  zoom: 17,
  center: new google.maps.LatLng(37.8269234,-122.4227218)
 };
 var map = new google.maps.Map(document.getElementById("map_canvas"), myOptions)
;}

google.maps.event.addDomListener(window, 'load', initialize);

  </script>

 </head>
 <body>
  <div id="map-canvas"></div>
 </body>
</html>
```

CSS:
Tells the map to fill 100% of the page.

JS:
Calls the map to the canvas, tells it the LatLng (Alcatraz).

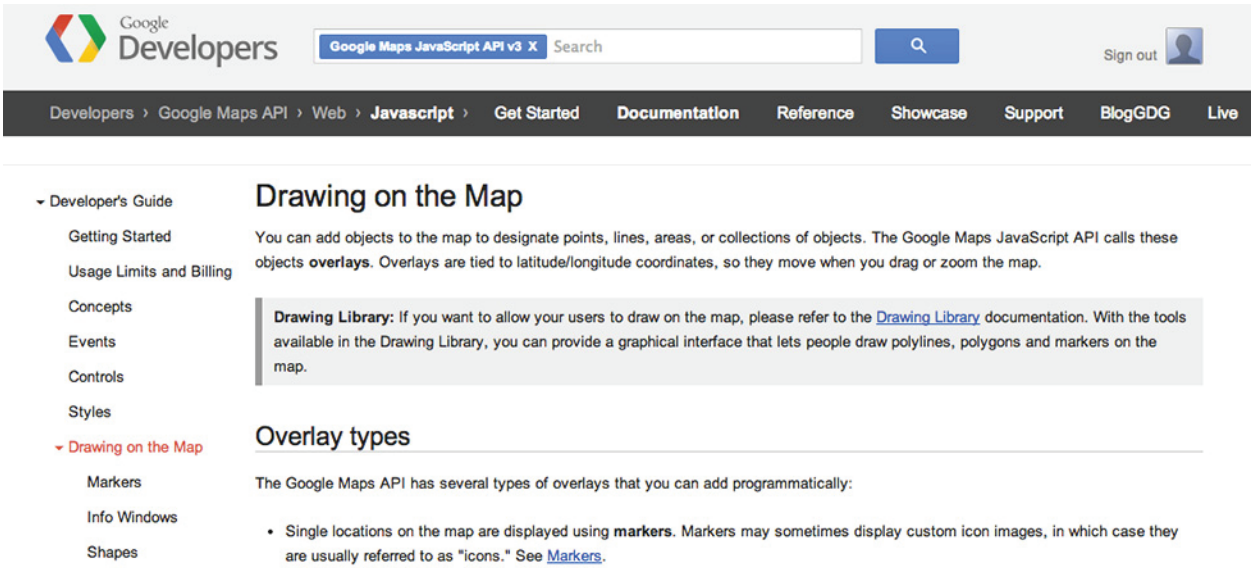
HTML:
The map is placed in



Google Maps Demos and Documentation

https://developers.google.com/maps/documentation/javascript/

https://developers.google.com/maps/documentation/javascript/overlays



Add a Marker to The Map

Create a variable with a LatLng coordinate:

```
var Alcatraz = new google.maps.LatLng(37.8269234,-122.4227218);
```

Then call a marker using that variable:

```
var marker1 = new google.maps.Marker({
position: Alcatraz,
title:"The Rock",

icon: `images/icon.png',
animation: google.maps.Animation.DROP,
});
```

Bonus:
Add a custom marker icon and an animation.

Now add an infoWindow to the marker. You can add HTML tags to the infoWindow and style the tags in CSS. Examples are <h1> <p> <hr> <img>

Add an InfoWindow to the Marker:

https://developers.google.com/maps/documentation/javascript/infowindows

Add a listener that tells the info1 variable to open on marker1 - on click:

```
google.maps.event.addListener(marker1, "click", function() {
info1.open(map, marker1);
});
```

Add an infoWindow variable:

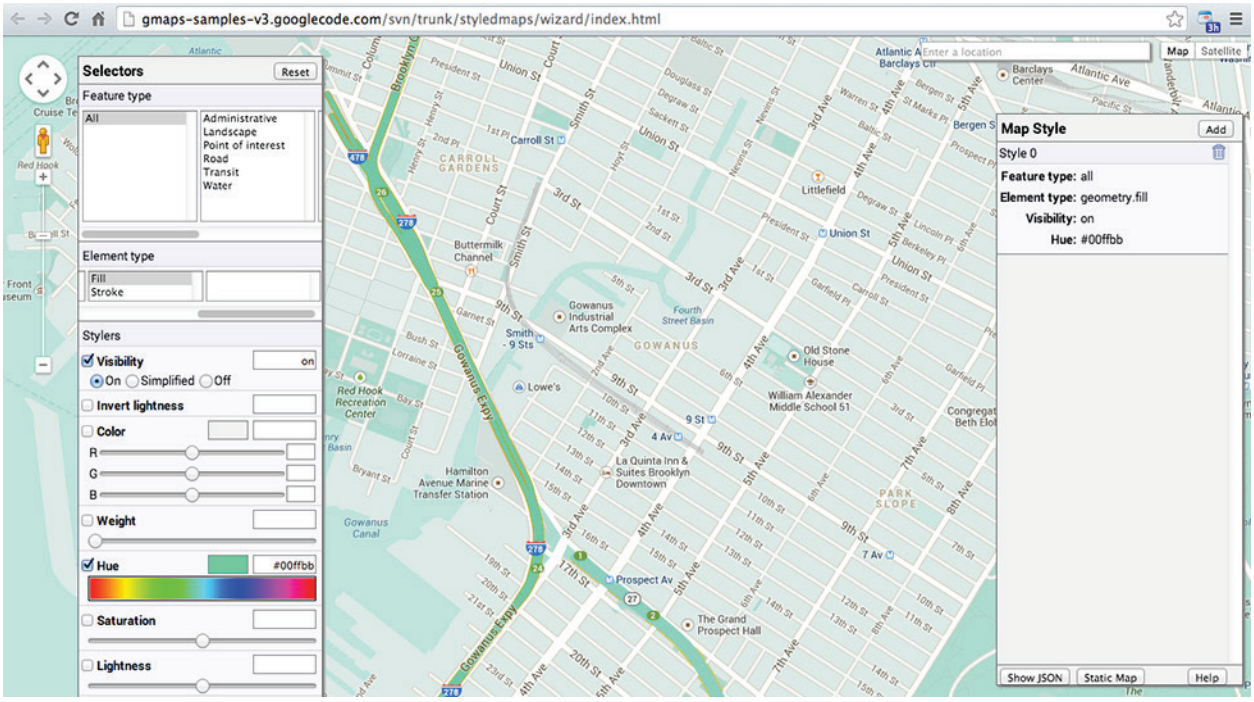
You need to create this image and save in an `images' folder

```
var info1 = new google.maps.InfoWindow({
content: "<div><h3>Alcatraz Island</h3><img src='images/therock.jpg'></img>
<p>A mile and a quarter of treacherous water</p></div>",
});
```

Don't forget to style the HTML tags with your CSS.

You're done.

You can add as many markers and infoWindow variables as you like.



Style Your Map

This handy online style wizard will help you manipulate your Google Map.

http://gmaps-samplesv3.googlecode.com/svn/trunk/styledmaps/wizard/index.html

The style wizard allows you to add a hue to the entire map or change the color of a specific point of interest. On the right side of the map, you can view the JSON code for the styled attribute. I found that I had to change the quotes around the attribute from double quotes to single quotes when I added it to my JS document.

Watch a tutorial here: http://youtu.be/0hhiEjf7_NA

You can see the parts of my online demo by plugging the URL

Have fun with Google Maps API.

A good resource for additional questions is Stackoverflow
http://www.stackoverflow.com

Thank you for using this SAVI tutorial about the Google Maps API.

If you have any questions or would like more information about SAVI,
email us at: SAVI@pratt.edu