



## WEEK 7

Learn and implement basic mapping and graphing libraries, how to add an API key, how to debug with Firebug console, jsFiddle, etc.

Review how a Google analytics JavaScript is added to a webpage, how the call is made and arguments are passed.

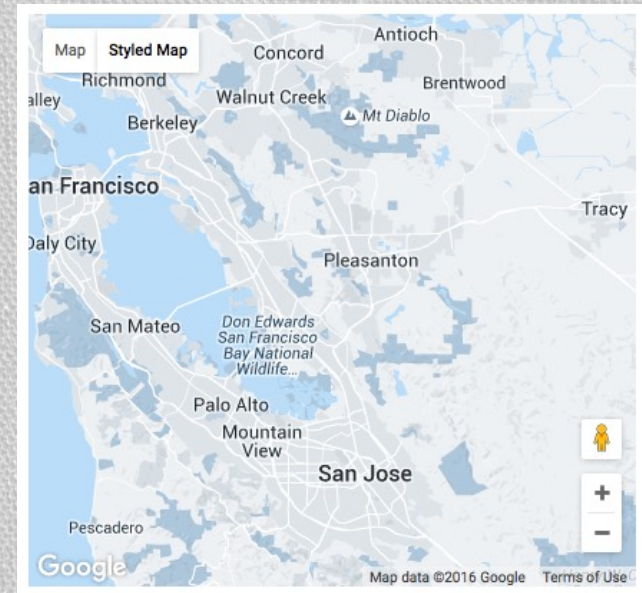
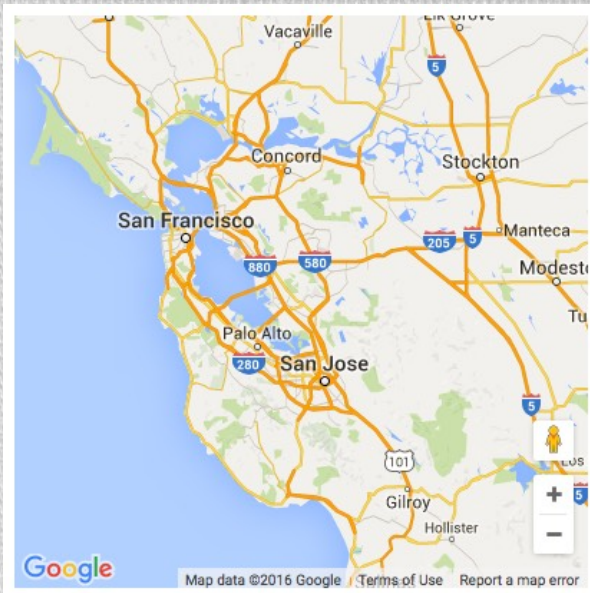
Review how some companies use JavaScript style guides and Github to manage cross-team coding, avoid bloated libraries and manage revisions; case study of AirBnB.



# Customize a Google Map with JavaScript

- <https://developers.google.com/maps/documentation/javascript/tutorial>
- How to get an API key and why
- See [googleMapBasic.html](#)
- Minimal customization
- See [www.Premierccs.com](http://www.Premierccs.com) customization

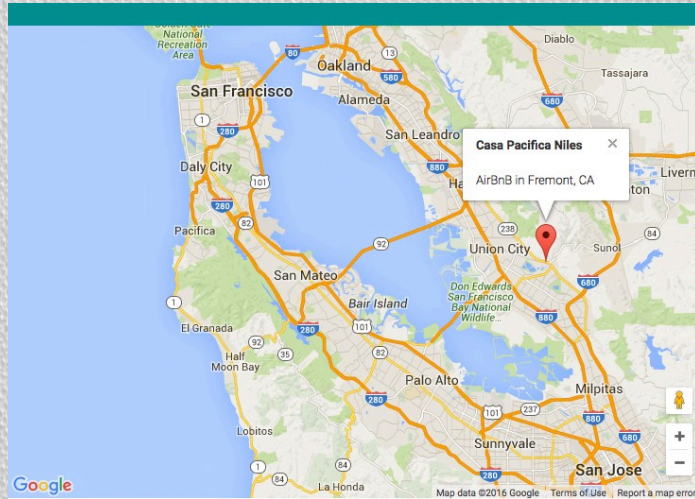
```
<body>
  <div id="map"></div>
  <script>
    function initMap() {
      var mapDiv = document.getElementById('map');
      var map = new google.maps.Map(mapDiv, {
        center: {lat: 37.578824, lng: -121.9777381},
        zoom: 8
      });
    }
  </script>
  <script src="https://maps.googleapis.com/maps/api/js?callback=initMap"
    async defer></script>
</body>
```





# More Customization

- See map on [casapacifica.com](http://casapacifica.com)



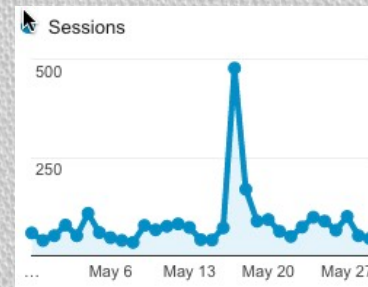
- Test your map on mobile
  - Fix scroll issue
  - <https://tommcfarlin.com/disable-scroll-zoom-in-google-maps/>

```
$(document).ready(function () {  
  
    // create a LatLng object containing the coordinate for the center of the map  
    var latlng = new google.maps.LatLng(37.578824, -121.9777381);  
    var windowHeight = jQuery(window).width();  
    if (windowWidth <= 640) {  
  
        // prepare the map properties  
        var options = {  
            zoom: 10,  
            center: latlng,  
            mapTypeId: google.maps.MapTypeId.ROADMAP,  
            navigationControl: true,  
            mapTypeControl: false,  
            scrollwheel: false,  
            disableDoubleClickZoom: true  
        };  
  
        // initialize the map object  
        var map = new google.maps.Map(document.getElementById('google_map'), options);  
  
        // add Marker  
        var marker1 = new google.maps.Marker({  
            position: latlng, map: map  
        });  
  
        // add listener for a click on the pin  
        google.maps.event.addListener(marker1, 'click', function() {  
            infowindow.open(map, marker1);  
        });  
  
        // add information window  
        var infowindow = new google.maps.InfoWindow({  
            content: '<div class="info"><strong>Casa Pacifica Niles</strong><br><br>AirBnB in Fremont, CA<br></div>  
        });  
    }  
});
```



# Google Analytics

- “If you aren’t tracking your marketing efforts then you are wasting your time.” ~me and millions of other marketing professionals
- Log into your Google account
- Go to [google.com/analytics](https://google.com/analytics) (basic analytics)
- Admin and create a new property
- Get code and add to every page
- See Google Documentation for more details



Acquisition		
	Sessions ↓	% New Sessions ↓
	2,542	74.55%
1 Direct	896	
2 Email	544	
3 Referral	445	
4 Social	341	
5 Organic Search	294	
6 (Other)	22	



```
<script>
(function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
(i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
})(window,document,'script','https://www.google-analytics.com/analytics.js','ga');

ga('create', 'UA-12750932-1', 'auto');
ga('send', 'pageview');
</script>
```



# API Keys (Application Programming Interface)

- When do I need an API key?
  - Facebook feed, Google maps, Youtube feed, etc
- Why do I need an API key?
  - More secure authentication
  - Proves you are you without username/password
  - Protects against a DoS hack



# Google API keys

Register your application for Google Maps JavaScript API, Google Maps Geocoding API, Google Maps Directions API, Google Maps Distance Matrix API, Google Maps Elevation API, Google Places API Web Service in Google API Console

Google API Console allows you to manage your application and monitor API usage.

## Select a project where your application will be registered

You can use one project to manage all of your applications, or you can create a different project for each application.

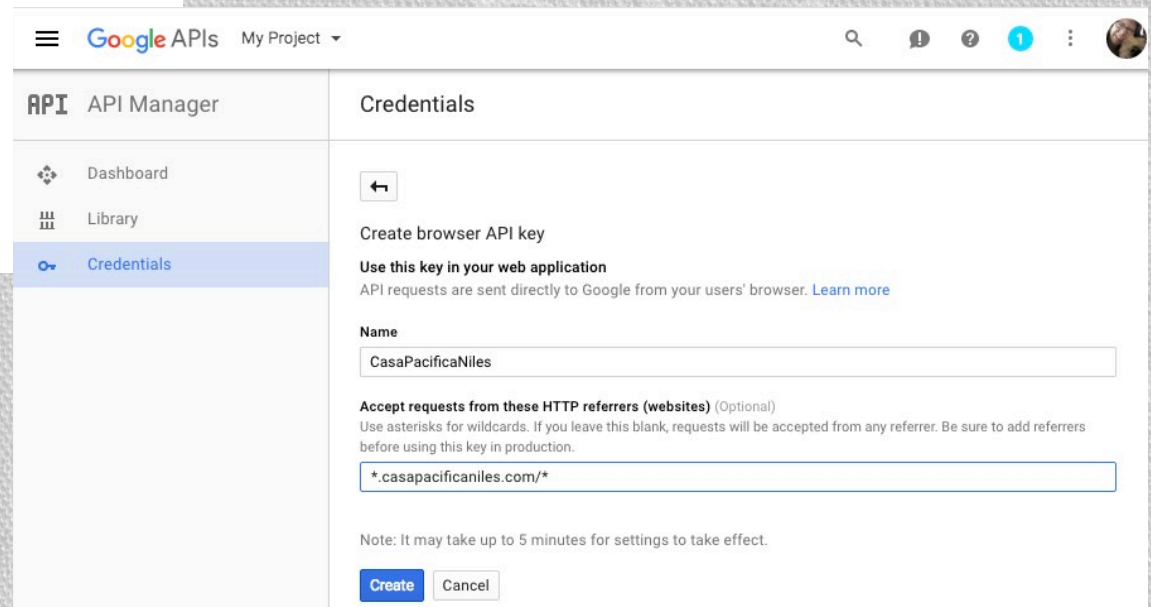
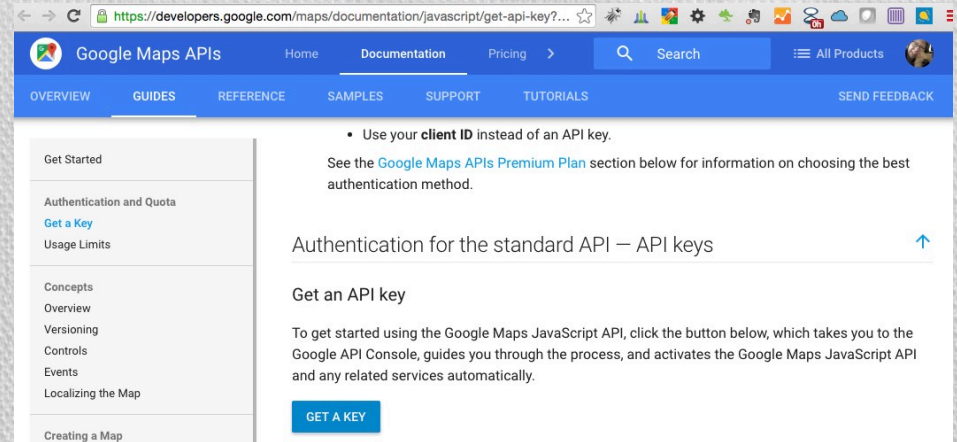
Create a project ▾

All projects

My Project radiant-cycle-126522

Manage all projects

Create a project...



```
<script src="js/casapacifica.js"></script>
<script src="https://maps.google.com/maps/api/js?key=AIzaSyCcvEyBT1cY99W609rv2WQtEkG1euE-73Y&callback=initializeMap" async defer></script>
```



# Other Widgets that need API keys

- If we have time
  - Adding a Facebook/Instagram feed to a website
    - Graph v2.0 API deprecated
  - Adding Twitter feed
    - <https://dev.twitter.com/web/embedded-timelines>
    - Let's do a search timeline for #siggraph2016
    - Or pick one and build with the tool





# Comparing Page Load Speeds

- An important part of choosing frameworks and libraries is page load speeds.
- Can you define the major contributing elements?
- Compare and contrast the different builds.
  - Collect a set of screenshots and annotate
- Switch to minified css and js and compare
  - Collect a set of screenshots and annotate
- Image optimization from mobile to Retina displays without harming page load speeds
  - <http://caniuse.com/#feat=srcset>
  - <https://www.sitepoint.com/how-to-build-responsive-images-with-srcset/>



# Optimize Performance With Lazy Loading

- Another article from The JavaScript Handbook
- This article by Eric Mann
  - ``
  - Consider with javascript [netm.ag/lazy-258](https://netm.ag/lazy-258)
- Pros and Cons of this technique



# Optimize Performance with Minify

- Look at your page load speeds
- Minify your css <https://cssminifier.com/>
- Measure the difference



# Bootstrap Dropdown Menu Fix

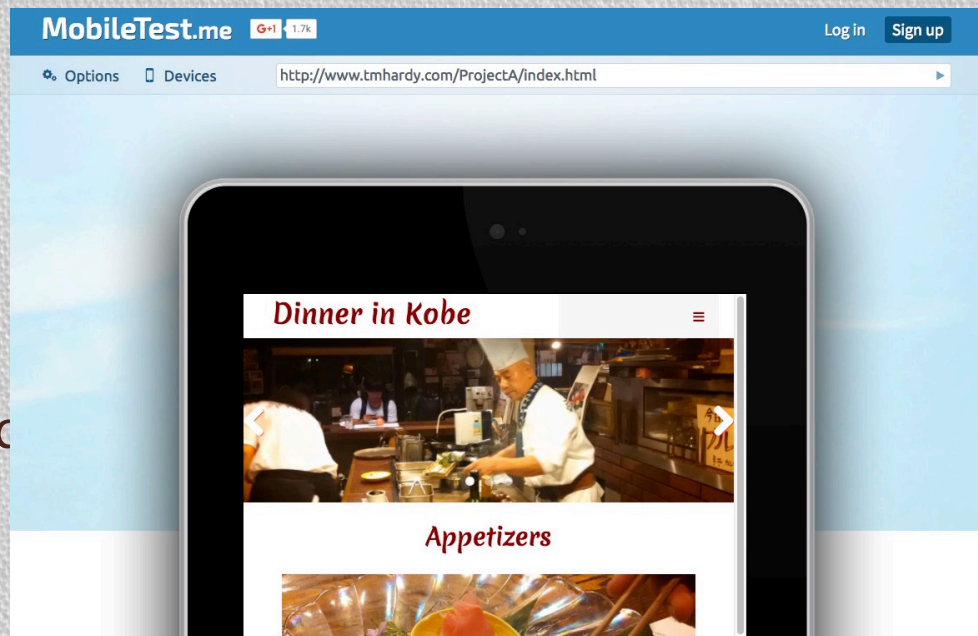
- Dropdown should work on hover but it doesn't

```
/* Dropdown on hover fix */  
li.dropdown:hover > .dropdown-menu {  
    display: block;  
}
```



# Missing Pieces in Project A

- Bootstrap uses respond.js (3kb) – enables responsive web designs in browsers that don't support CSS3 Media Queries (IE8 and below)
- Some use modernizr.js to provide fallbacks
- Testing options:
  - Browsershots.org
  - BrowserStack.com
  - Mobiletest.me
  - Not much for old IE
  - Virtual machine download





# Seven Steps to Better Javascript

- Code
  - Document
  - Analyse
  - Test
  - Measure
  - Automate
  - Handle exceptions
- 
- Credit: The JaaScript Handbook, From the makers of Net, author of this article is Den Odell



# Bootstrap 4 Alpha Release

- Only supporting IE9+ and iOS7+
- Switched from Less to Sass
- Switched from px to rem and global font to 16px
- Added 480px breakpoint
- Added flexbox
- Beware of extensive grid changes, new tier!
- Dropped glyphicons... use what you want
- Dropped Affix jQuery plugin for position: sticky
- Dropped the pager
- Renamed .img-responsive to .img-fluid
- And more...
- Keep an eye on <https://v4-alpha.getbootstrap.com/migration/>



# Inspiration

- From The Javascript Handbook by the makers of net.
- Matt Keas mkeas.org
- <https://github.com/matthiasak/radial-menu>



# Q&A on Projects A and B

- Lab time to wrap up any issues on these projects so we can present and compare next week.
- Check your page speeds, images, validation
- Assignment:
  - Document the differences, pros and cons of these frameworks
  - Identify the libraries, design patterns, widgets you used and liked or didn't like. Explain and include the revisions



# Assignment

- Document your view of the different approaches to implementation.
- Refine and submit both final projects.