



# CS55.11 JavaScript

Spring 2017 ~ Ethan Wilde

*Week 7*



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JUNIOR COLLEGE

# Google Maps API Basics

- 1. The Google Maps JavaScript Library**
- 2. Related JavaScript Capabilities**
- 3. Basic Google Map Objects**
- 4. Advanced Google Map Objects / Code**
- 5. Basic Steps to Create a Map**
- 6. Code Examples**

**<https://developers.google.com/maps/>**

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# Google Maps JavaScript Library

- 1. Google Maps API v3**
- 2. Generates maps and related objects**
- 3. Supports geographic calculations like distance**
- 4. Supports user-generated events**
- 5. Can be styled with visual properties**

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# Related JavaScript Capabilities

Browser-based geolocation	Time-based event triggers
<b><i>navigator.geolocation</i></b> object allows browser to provide location info	<b><i>setTimeout()</i></b> allows time-based code execution
<i>navigator.geolocation.getCurrentPosition</i> returns coords	<i>setTimeout()</i> can be called in a daisy-chain fashion to create a cycle
<i>navigator.geolocation.getCurrentPosition</i> expects function	<i>setTimeout()</i> expects a function and a time duration in milliseconds

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# Basic Google Map Objects

<b>Map()</b>	A complete interactive map object rendered in an HTML container, centered at a latitude and longitude.
<b>Marker()</b>	A marker pin located at a latitude and longitude on a specific map.
<b>InfoWindow()</b>	A dialog contained within a specific map, containing HTML content.
<b>LatLng()</b>	A geocoordinate composed of a latitude and longitude.



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# Advanced Google Map Objects + Code

<b>Polyline()</b>	xxx
<b>Polygon()</b>	xxx
<b>Rectangle()</b>	xxx

<b>Geometry library</b>	Additional methods to support geometric calculations in a map.
<b>computeDistanceBetween()</b>	Method to return distance between two LatLng() points.

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# Basic Steps to Create a Map

1. Load the Google Maps API JavaScript library file (after getting API key).
2. Provide an HTML element as map container.
3. Prepare map options.
4. Call Google Map API library to create Map object in HTML container.
5. Create and add additional map-related objects using the Google Map API.  
*Blocks of code to respond to events (handlers) can be added as well.*

***<https://developers.google.com/maps/documentation/javascript/get-api-key>***

# Basic Steps to Create a Map




```
<!-- Load the Google Maps API library -->  
<script type="text/javascript"  
src="https://maps.google.com/maps/api/js?key=AIzaSyANwuVysbRlA9s-4mgKvkdxL0ODklj-Hhg"></script>
```

## 1. Load Google Maps API Library.

***Note: You must get a free API key first!***

# Basic Steps to Create a Map



```
<div id="map-container" style="height:400px;width:600px;">  
</div>
```

**2. Provide HTML element as map container.**

# Basic Steps to Create a Map



```
var mapOptions = {  
  zoom: 10,  
  center: mapCoords  
};
```

**3. Prepare map options.**

# Basic Steps to Create a Map

```
var map1 = new google.maps.Map(document.getElementById("map-container"), mapOptions);
```

**4. Call Google Maps API library to create map within HTML container.**



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# Code Examples

**“Google Map API Examples”**

*A tour through seven examples  
including browser geolocation...*