



# Mobile Mapping

With Google Technologies

IEEE-NATEA Joint Conference

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Developer Advocate

# What is a Maps Mash-up?

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Provided by API Provider:

- Map Tiles
- JavaScript code
- Routing data
- Controls

Provided by developer

- Data provided by developer

Possibly the first Maps Mashup: [Housing Maps](#)

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# Why we care about mobile maps

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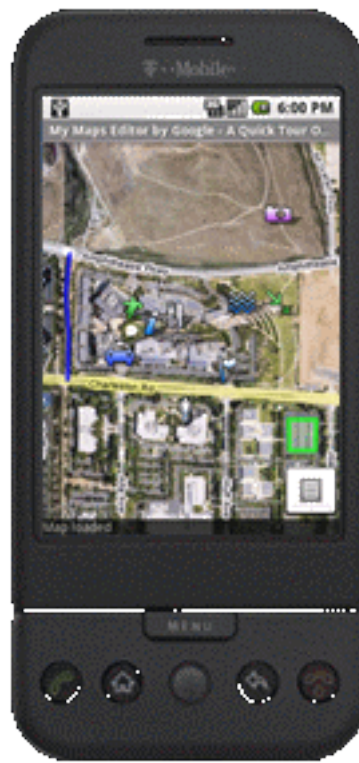


- Most people in world use mobile phones
- Mobile devices have location potential
- Location based services
- Our developers care

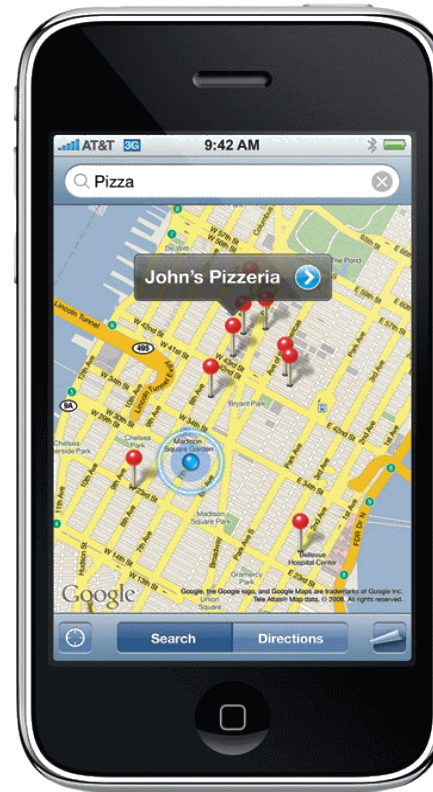
# What are (were) the API options?



Lowest common denominator:  
Static Maps



Android, iPhone:  
Native APIs



iPhone, Android,  
Nokia, Palm, etc:  
JavaScript API

# Browsers vs Native Apps

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- Many different platforms
  - Let us solve the cross-device issues
  - Mashups available on desktop as well as mobile
  - No download
  - We can release features (and bug fixes) faster
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# What makes mobile browsers tricky?

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- Screen size
  - User interface and interaction
  - Speed
  - Use cases
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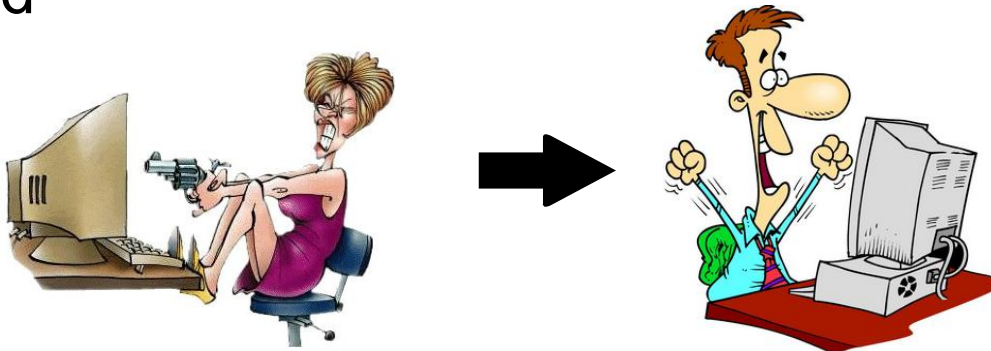
# What is Latency?



- Page load: the time until all components of the page are loaded, visible, and usable

Console	HTML	CSS	Script	DOM	Net					Options	
GET v=cn1.11&hl=zh-CN&						304 Not Modified	mt0.google.cn	11 KB		724ms	
GET v=cn1.11&hl=zh-CN&						304 Not Modified	mt1.google.cn	13 KB		758ms	
GET v=cn1.11&hl=zh-CN&						304 Not Modified	mt2.google.cn	7 KB		753ms	
GET v=cn1.11&hl=zh-CN&						304 Not Modified	mt3.google.cn	8 KB			447ms
GET v=cn1.11&hl=zh-CN&						304 Not Modified	mt1.google.cn	11 KB			426ms
GET v=cn1.11&hl=zh-CN&						304 Not Modified	mt1.google.cn	10 KB			411ms
GET v=cn1.11&hl=zh-CN&						304 Not Modified	mt3.google.cn	9 KB			392ms
GET vp?spn=0.005712,0.0						200 OK	ditu.google.cn	?		377ms	
GET gen_204?imp=maps_						204 No Content	ditu.google.cn	?		919ms	
GET poweredby.png						200 OK	maps.gstatic.cn	4 KB			1.48s
GET mapcontrols3d5.png						200 OK	maps.gstatic.cn	3 KB		332ms	
GET openhand_8_cur						200 OK	maps.gstatic.cn	326 B		789ms	
37 requests							318 KB (241 KB from cache)			13.09s	

- User perceived: the time until the page appears to have loaded



# Causes of Latency

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- Serving data
  - Download time
    - Bandwidth vs latency
      - 3G networks have reasonably high bandwidth but low latency
      - Loading small and big files take a surprisingly similar amount of time
  - JavaScript parsing time (iPhone Safari)
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# Maps API v3

Google

## ★ Google Maps JavaScript API V3 ([Labs](#))

[Home](#)[Docs](#)[Sign up for an API key](#)[Create a KML Sitemap](#)

### Maps API Version 3

 [Developer Guide](#)[Tutorial](#)[Events](#)[Controls](#)[Overlays](#)[Services](#)[API Reference](#)[Samples](#)[Demo Gallery](#)[Known Issues](#)

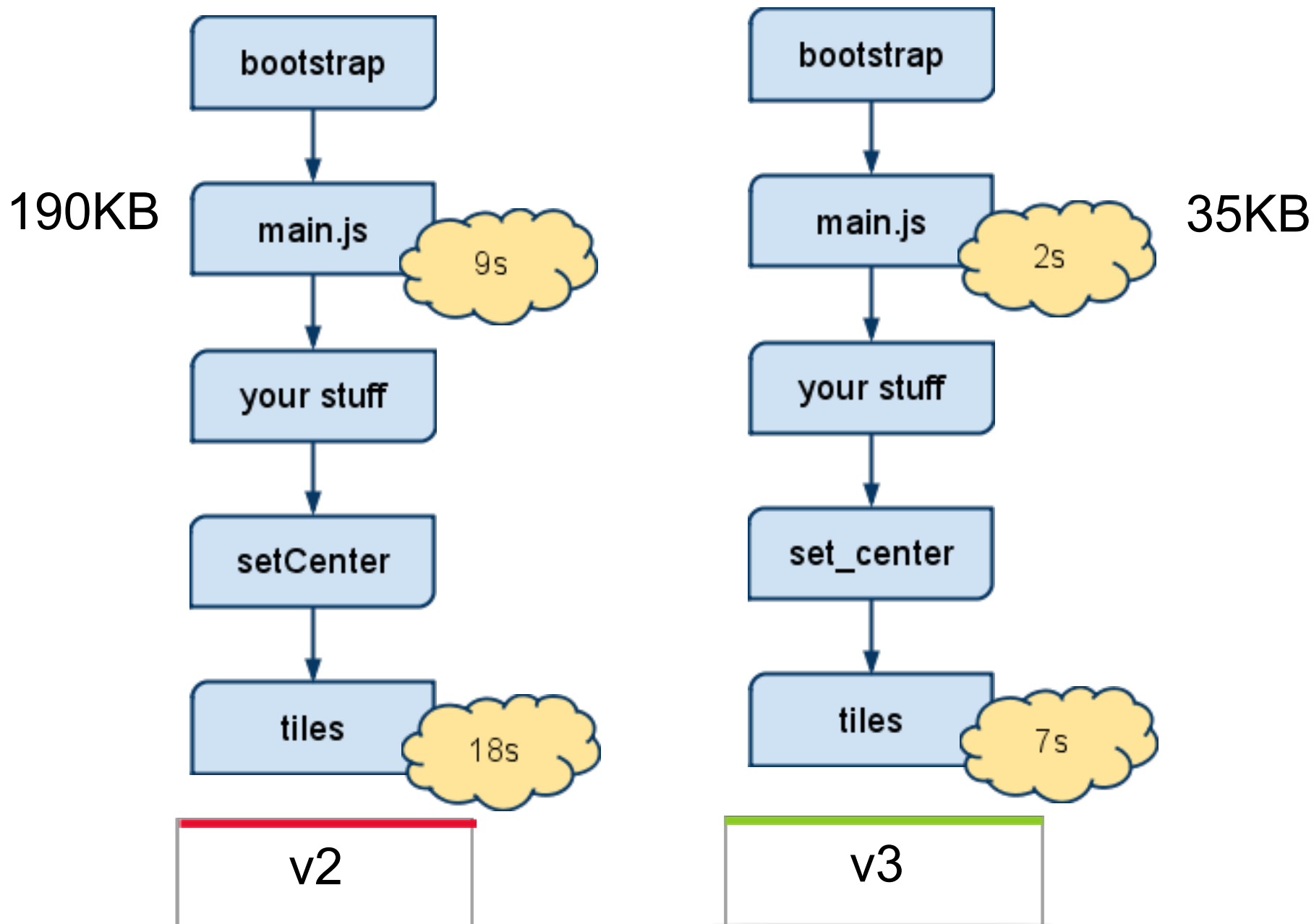
## The Google Maps API V3

[Welcome to Version 3](#)[Audience](#)[Specifying the Sensor Parameter](#)[Versioning](#)[Troubleshooting](#)

### Welcome to Version 3

Welcome to the release of version 3 of the Google Maps API. This JavaScript API will look like the previous version of the Google Maps API. However, much has changed under the hood: Version 3 (called V3 within this document) is especially optimized for mobile browsers such as Android-based devices and the iPhone™. The init function is no longer available in the V2 API. We will migrate additional features from V2 while working to keep our optimized loading speeds. We welcome your feedback and comments on the [Google Maps API V3 discussion group](#).

# Speed Comparison

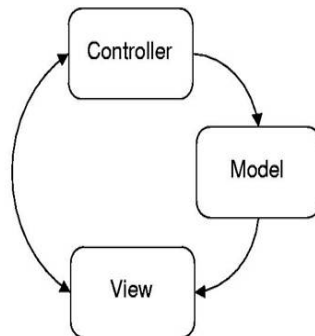


# How Does v3 Accomplish This?



- Start with static map

- MVC Architecture



- Remove unneeded code, Untangle code



# Causes of Latency

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```
var map = new google.maps.Map(  
    document.getElementById("map_canvas"),  
    { center: new google.maps.LatLng(37.442, -122.142),  
      zoom: 13,  
      mapTypeId: google.maps.MapTypeId.ROADMAP  
    });  
var marker = new google.maps.Marker(  
    {  
      position: map.get_center(),  
      map: map  
    });
```

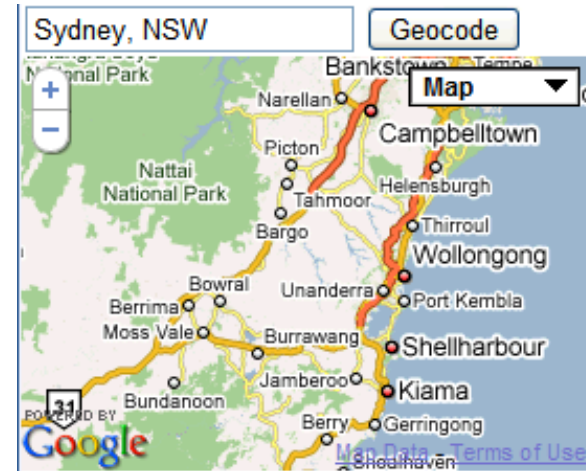
[Simple Map](#)

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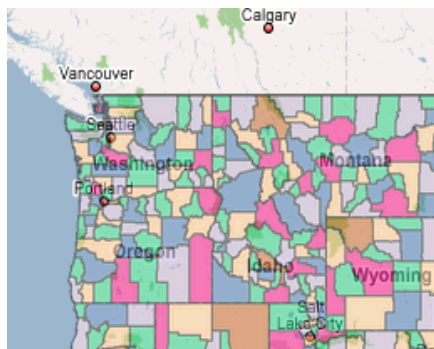
# What Can You Do With v3?



## Markers, Controls, InfoWindows



## Geocoding (Forward/Reverse)



## Custom Overlays

# Screen Size Dependant Default UI



Learn more at <http://code.google.com/apis/maps/>

Get Qualified: <http://code.google.com/qualify/>



# Questions

Google