

Google™



What You Don't Know About Geo APIs Can't Hurt You

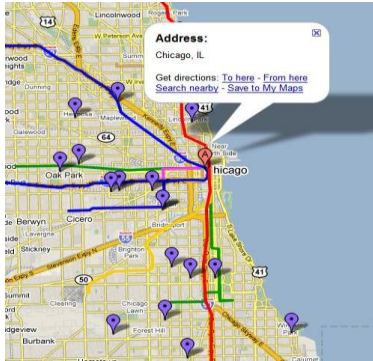
Pamela Fox and Mano Marks
May 27th, 2009

Post your questions for this talk on Google Moderator:
code.google.com/events/io/questions

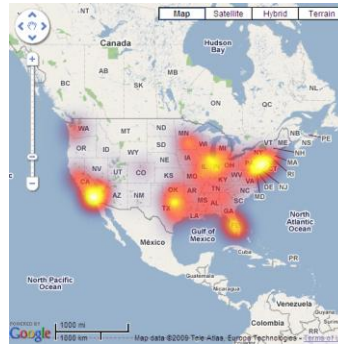


The World of Geo APIs

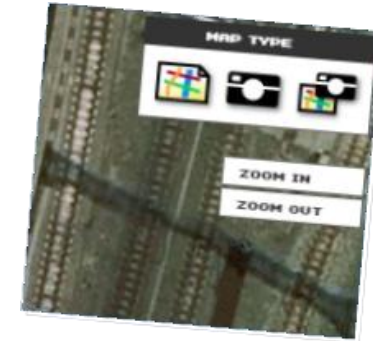
Mapplets



JS Maps APIs



Maps API for Flash



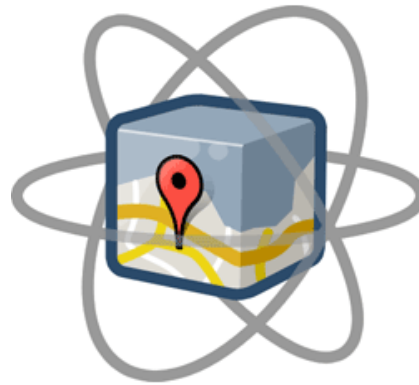
Panoramio API



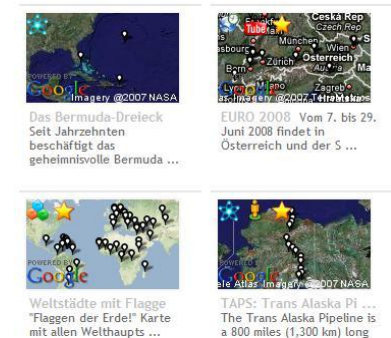
KML



Maps Data API



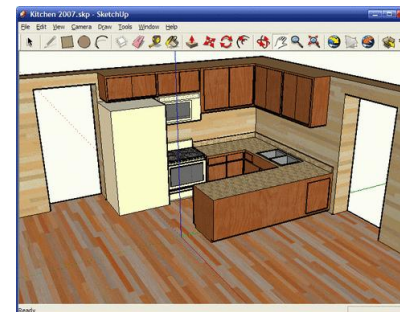
Static Maps APIs



Earth API



SketchUp API





Google Earth Touring and HTML support



Touring Uses

- Control Movement of Camera
- Animate models
- Animate polygons
- Play sound
- Change Placemarks
- Show historic imagery
- Toggle description balloons

Simple Tour

```
<gx:Tour>
  <name>Sample Tour</name>
  <gx:Playlist>
    <gx:FlyTo>
      <gx:flyToMode>smooth</gx:flyToMode>
      <Camera>
        <longitude>-122.073003</longitude>
        <latitude>37.40046499999999</latitude>
        <altitude>11638.65917999631</altitude>
        <heading>-1.590277340731758e-014</heading>
        <tilt>0</tilt>
        <roll>3.180554681463517e-015</roll>
        <altitudeMode>absolute</altitudeMode>
      </Camera>
    </gx:FlyTo>
  </gx:Playlist>
</gx:Tour>
```

Add in Sound

```
<gx:SoundCue>  
<href>foo.mp3</href>  
</gx:SoundCue>
```

Change the imagery

```
<gx:FlyTo>  
  <gx:duration>0.2128530302036324</gx:duration>  
  <gx:flyToMode>smooth</gx:flyToMode>  
  <Camera>  
    <gx:TimeStamp><when>1990-08-04</when></gx:TimeStamp>  
    <longitude>-122.0794596906334</longitude>  
    <latitude>37.40747097517257</latitude>  
    <altitude>17811.63990518622</altitude>  
    <heading>2.614760393329551e-005</heading>  
    <tilt>0</tilt>  
    <roll>3.180554681463517e-015</roll>  
    <altitudeMode>absolute</altitudeMode>  
  </Camera>  
</gx:FlyTo>
```


Move a model

```
<gx:AnimatedUpdate>  
  <gx:duration>2</gx:duration>  
  <Update>  
    <targetHref></targetHref>  
    <Change>  
      <Location targetId="foo">  
        <longitude>-105.283</longitude>  
        <latitude>40.017</latitude>  
        <altitude>14</altitude>  
      </Location>  
    </Change>  
  </Update>  
</gx:AnimatedUpdate>
```

Touring in the Earth API

```
google.earth.fetchKml(ge, href, function(kmlObject) {
  if (!kmlObject) {
    setTimeout(function() {
      alert('Bad or null KML.');
```

```
    }, 0);
    return;
  }

  ge.getFeatures().appendChild(kmlObject);

  walkKmlDom(kmlObject, function() {
    if (this.getType() == 'KmlTour') {
      tour = this;
      return false;
    }
  });
});
```



Touring Demo



HTML in Google Earth 5.0

- Description balloons have full HTML 4 support
- JavaScript support
- iFrames
- HTML 5:
 - canvas
 - dialog
 - video (Mac only)
 - audio (Mac only)

HTML in KML

Show sample

Limitations

- Full HTML not supported in Maps
- Earth plugin quirksiness
 - Images in html
 - Security



HTML 5 in KML Demo





SketchUp API



SketchUp

3D modeling for everyone

- Create, modify, and share 3D models
- Integrate with Google Earth, Earth API
- Transform other formats

SketchUp API

- Ruby API can do
 - Custom drawing tools
 - Annotation
 - Animation
 - Automation
 - Links to other applications

SketchUp API

- Ruby API can do
 - Custom drawing tools
 - Annotation
 - Animation
 - Automation
 - Links to other applications



SketchUp API Demo





Maps APIs





Driving Directions



Driving Directions

From:

To:

Language:

Formatted Directions



San Francisco, CA

36.9 mi (about 40 mins)

1. Head **northeast** on **Market St** toward **11th St** 0.1 mi
2. Turn **right** at **10th St** 0.6 mi
3. Turn **left** to merge onto **US-101 S** toward **San Jose** 35.4 mi
4. Take exit **398** toward **Moffett Blvd** 0.2 mi
5. Turn **left** at **Moffett Blvd** 0.5 mi
6. Slight **left** to stay on **Moffett Blvd** 390 ft



Mountain View, CA

Map data ©2009 Sanborn, Tele Atlas

Map



POWERED BY
Google

Map data ©2009 Tele Atlas - [Terms of Use](#)

Driving Directions

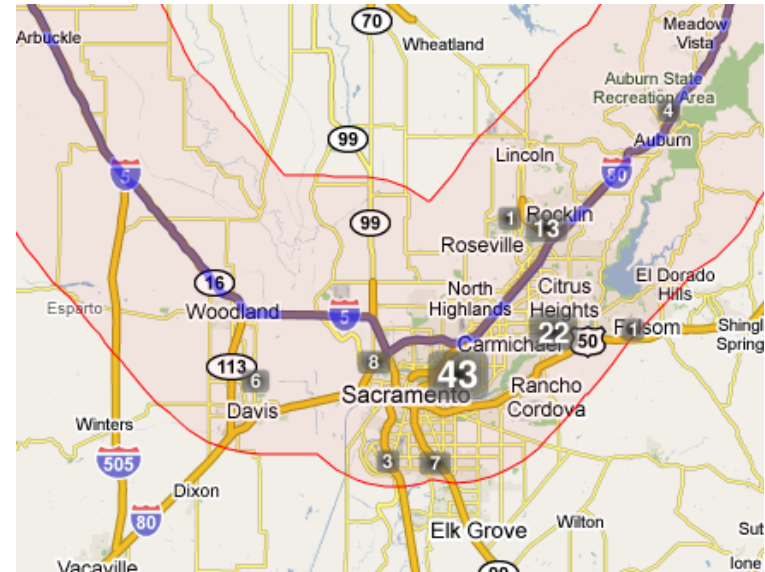
```
directions = new GDirections(map, panel);  
directions.load("from: San Francisco to: Boston",  
  {travelMode: G_TRAVEL_MODE_WALKING});
```

```
directions.loadFromWaypoints(  
  ["Paris", "Versailles", "Fontainebleau"],  
  {avoidHighways: true});
```

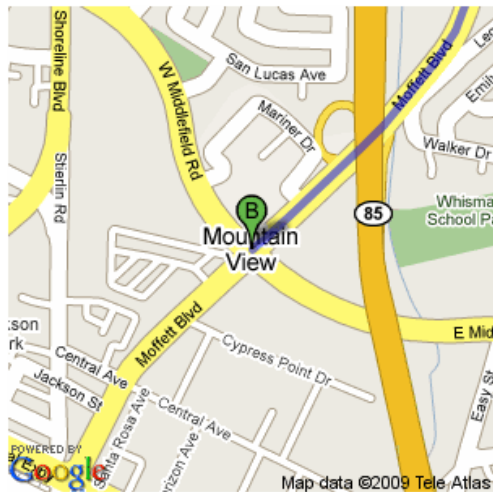

Driving Directions



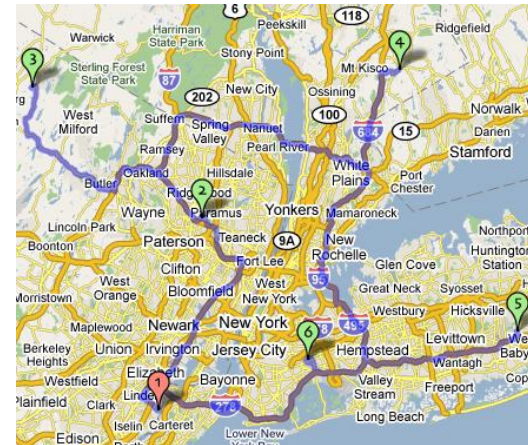
Draggable



POIs along route



Printable



TSP Solver



Desktop Maps





Updated Terms

Can I use Google Maps in my non-Web application?

Yes, the Google Maps APIs can now be used in Desktop applications, provided that they adhere to the other restrictions of the Terms of Service. Note that in order for a desktop application to be deemed "publicly accessible", there must be a publicly accessible webpage from which it can be downloaded. See Section 7.1c of the Terms of Service for more information.

[FAQ](#)



AIR

AIR is a runtime that enables access to the desktop, file system, clipboard, etc. It can be used with the API to create powerful map desktop apps.

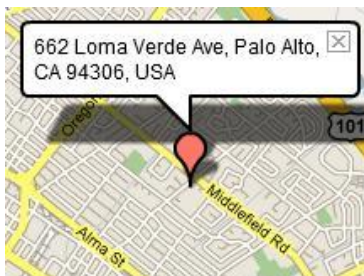


[Flickr Map Updater](#)

```
61.47134, "JET Kangasala"  
61.81306, "JET Kankaanpää"  
60.39821, "JET Kerava"
```



[Map CSV Parser](#)



[Map Clipboard](#)



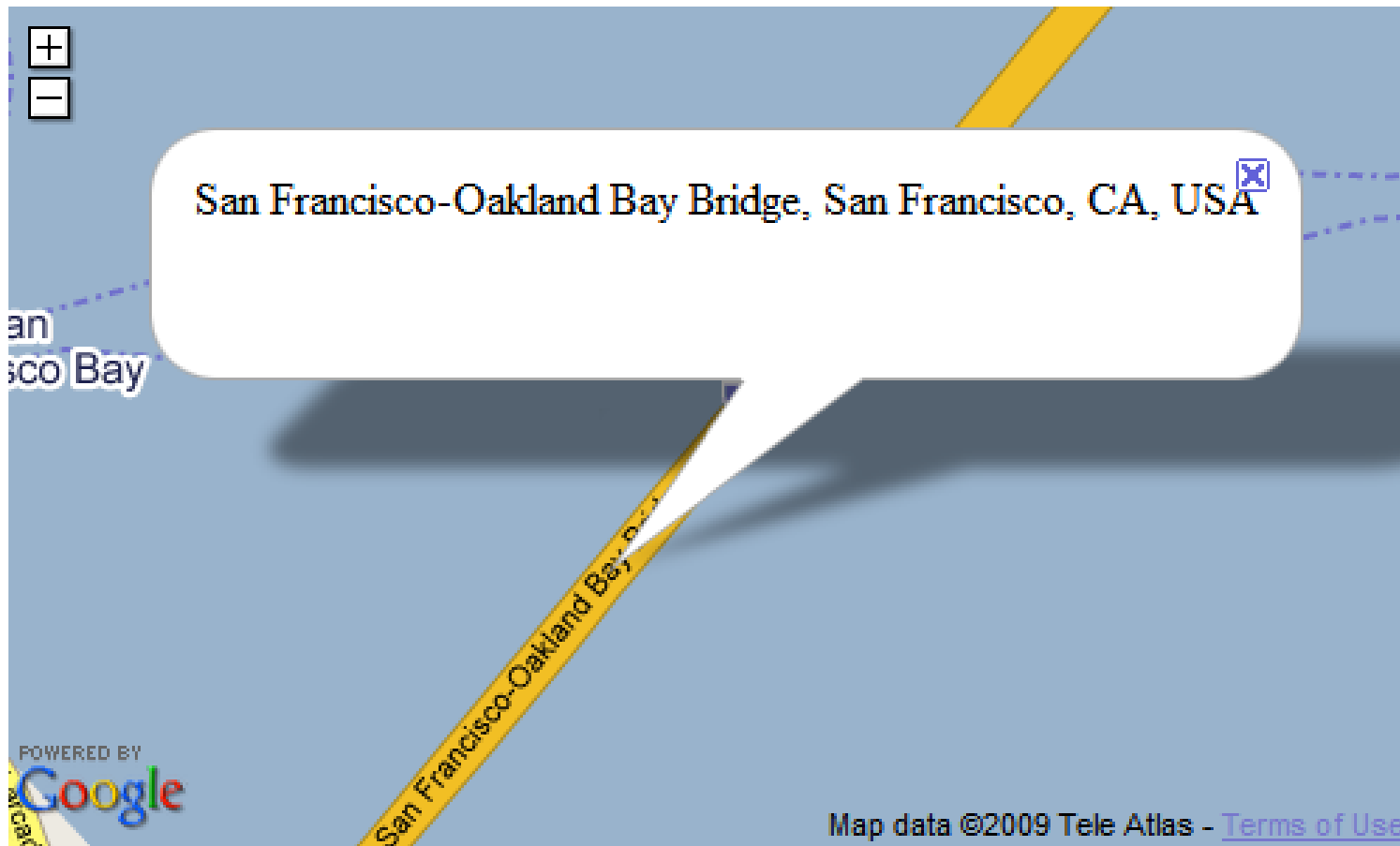
Reverse Geocoding





Reverse Geocoding

(Lat, Lng) -> Address(es)



[Reverse Geocoding](#)



Reverse Geocoding

```
geocoder.getLocation(latlng,  
function(addresses) {  
  if(addresses.Status.code == 200) {  
    var result = addresses.Placemark[0];  
    map.openInfoWindow(latlng, result.address);  
  }  
}  
);
```



Reverse Geocoding



[MeetWays](#)

Keewatin Region, Nunavut Territory, Canada



[Reverse Game](#)

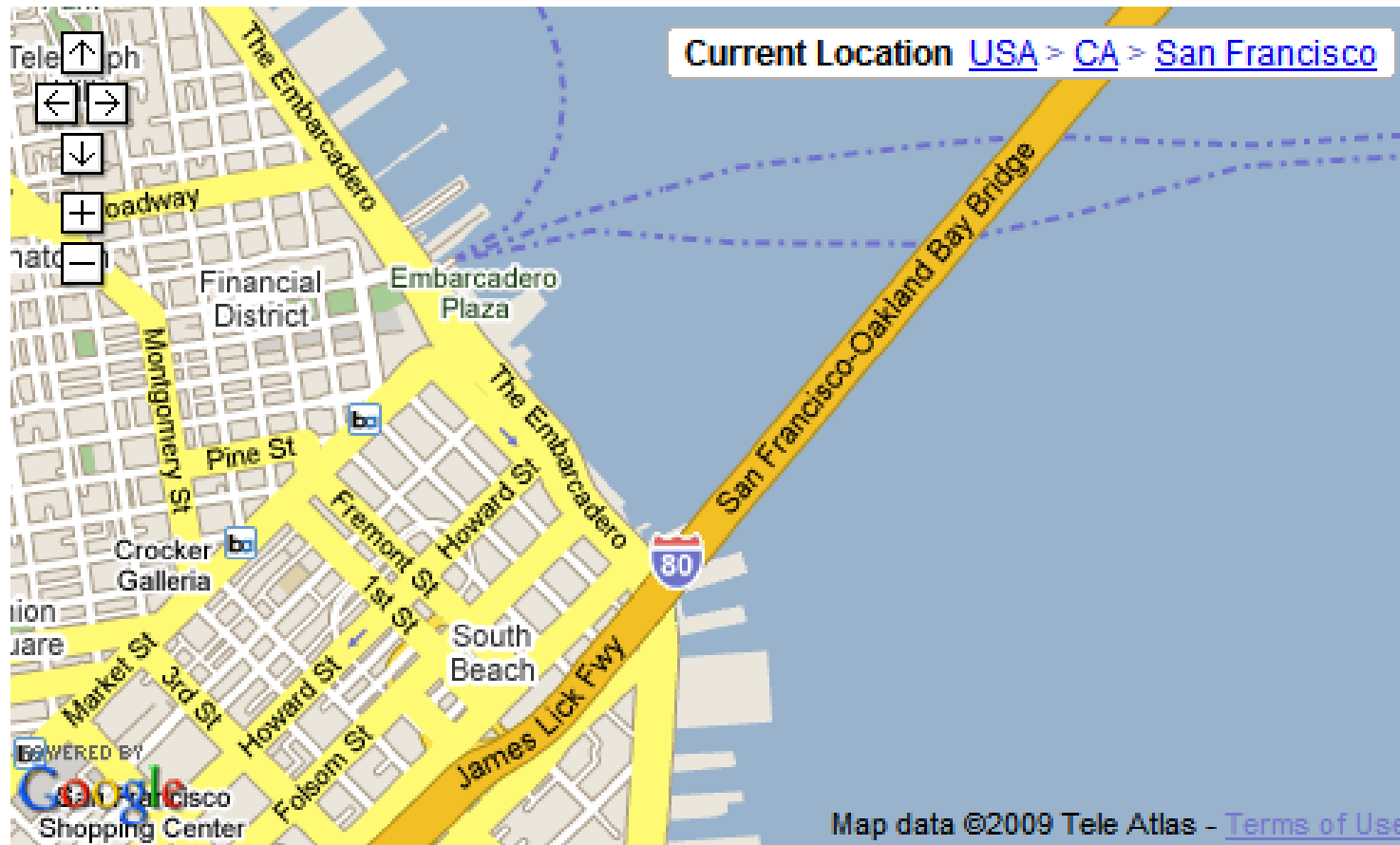


[LatLong Generator](#)

Sl. No	Area	Latitude	Longitude
1	Wardha, Maharashtra, India	20.427012814257385	78.7060546875
2	Tumkur, Karnataka, India	13.239945499286312	76.5966796875
3	Orissa, India	21.69826549685252	84.0673828125
4	Gadchiroli, Chhattisgarh, India	19.932041306115536	80.15625



GNVLabelControl



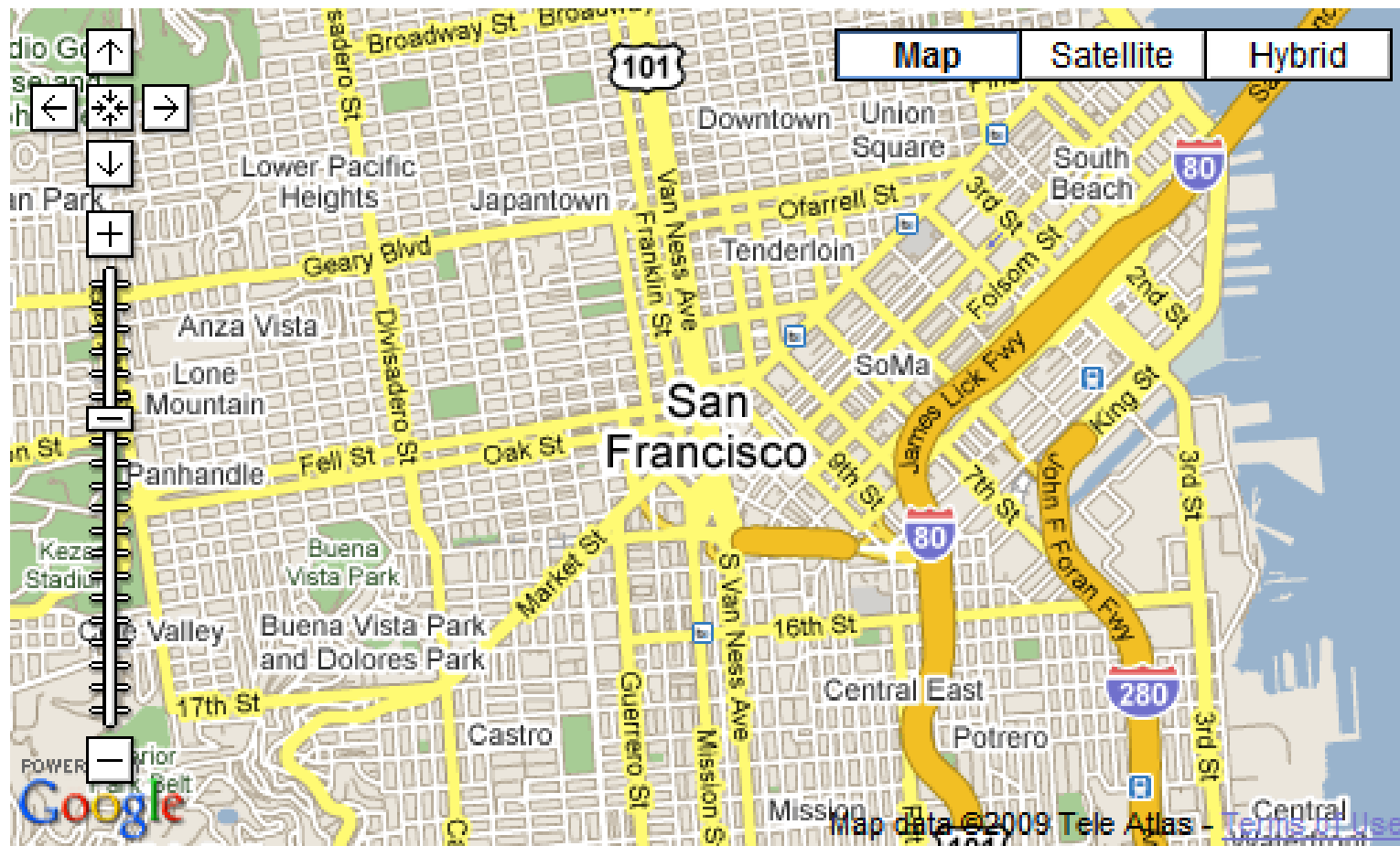
[Example](#)

User Location





ClientLocation



Showing IP-based location: **San Francisco, CA**

[ClientLocation](#)



ClientLocation

```
var zoom = 3;  
var latlng = new google.maps.LatLng(37, -100);  
  
if (google.loader.ClientLocation) {  
    zoom = 13;  
    latlng = new google.maps.LatLng(  
        google.loader.ClientLocation.latitude,  
        google.loader.ClientLocation.longitude);  
}  
  
var map = new google.maps.Map2(document.getElementById('map'));  
map.setCenter(latlng, zoom);
```



ClientLocation: Examples

hookupmaps Filters: m4m | m4w | w4m | w4w | all Age: min max Date: All

San Francisco, CA search post title and body [clear] Has Picture Hook me up

show all listings in: sfc | sbx | eby | pen | nbx | scz | sqz | csd [Map] [Satellite] [Hybrid]

mountain view - 354 hookups in all [post]

October 23 showing 1-50 next>>

- 7:24p 43 Professional SWM seeks SAF...
- 7:21p I can host a Circle Jerk! 18
- 7:21p 31 Seeking Greek or Slavic Male
- 7:18p 52 looking for a younger ass to abuse...
- 7:07p need it tonight
- 6:30p 42 Great catch seeking smart curvy woman
- 6:27p 54 Can You Do Better Than My Last Date?
- 6:23p 24 Young Latin for white people inmountain view
- 6:18p would love a deep oil massage.....
- 6:18p 24 Come break me in
- 6:17p 41 Artistic businessman meets curvy girl w/personality
- 6:13p needing some diversional fun
- 5:48p Warm Relaxing Massage For nice Woman that also likes Massage. Any Age
- 5:47p 42 drinks, chatting, laughing etc....
- 5:38p 42 Want to catch a movie?
- 5:25p 29 Indian needs head
- 5:12p 38 Asian Jock Bottom Here- Host or Travel
- 5:09p asians tops needed
- 3:55p 55 Let's meet for coffee near Mountain View/Los Altos
- 3:26p 39 Toned Hot Guy Seeking Massage from Guy
- 3:25p any white tops?
- 3:09p 31 Anyone up for some post work-out fun? Gold's Mountain View
- 3:04p 44 You would never expect to meet someone like me here
- 2:54p 47 An enjoyable evening together?
- 2:48p 30 PLEASE NO CYBERDATING
- 2:47p 36 Hot wet chat on YIM
- 2:37p 39 39 reasons you want me...
- 2:03p 34 Life in the fast lane
- 1:52p 35 Looking for an Indian dude for fun
- 1:35p 39 Looking for a female cop
- 1:34p 35 SWM seeking my own BBW
- 12:34p 35 Kevin I'll meet you at Adam's place on Tuesday...
- 12:00p 44 You would never expect to meet someone like me here.
- 11:59a 41 Outgoing Intellectual man w/ sense of humor, heart. ISO awesome woman
- 11:38a 46 HELLO EVERYONE, I AM LOOKING FOR MY SOUL MATE... It...

Map data ©2008 Tele Atlas

Have fun and remember to always play safe!

HookUpMaps

No points to display in this region :
ing NY, San Francisco, San Diego, Los Angeles, and
Please choose a different region.

Map data ©2008 Me



Maps API Monetization



AdSense for Maps: GoogleBar

SeeYourHotel Where? e.g., "Paris", "White House" or "JFK" **US and Canada: 1-800-657-9638**
Europe: 00-800-11-20-11-40

The easiest way to see where you'll stay

Follow us on Twitter
Deal email alerts

Narrow Your Results

Name:

Price: From 0\$ To Any

Star: Any

Last 10 Viewed Hotels

Map Satellite Terrain

Ads by Google

Chuck E. Cheese's Coupons
Any Game. Any Ride. Just One Token.
That's 25c Fun at **Chuck E Cheese's!**
www.ChuckE Cheese.com

- A** [Chuck E Cheese's](#) - 11324 Boardwalk Dr
- B** [Chuck E Cheese's](#) - 3555 Ambassador Caffery
- C** [Chuck E Cheese's](#) - 1725 Metro Dr
- D** [Chuck E Cheese's](#) - 7680 Andrea Dr
- E** [Chuck E Cheese's](#) - 7000 Veterans Memorial Blvd
- F** [Chuck E Cheese's](#) - 3221 E Prien Lake Rd
- G** [Chuck E Cheese's](#) - 1755 Martin Luther King Blvd
- H** [Chuck E Cheese](#) - 124 Northshore Blvd

1 2 3 4 [More results](#) [Clear results](#)

Google

Map data ©2009 Tele Atlas - [Terms of Use](#)

[SeeYourHotel](http://SeeYourHotel.com)

AdSense for Maps: GoogleBar

```
var opts = {  
  googleBarOptions : {  
    adsOptions : {  
      client : 12326949432  
    }  
  }  
}
```

```
map = new GMap2(div, opts);  
map.setCenter(new GLatLng(33,-118), 13);  
map.enableGoogleBar();
```


AdSense for Maps: GoogleBar Customizations

Chuck E Cheese's
1725 Metro Dr
Alexandria, LA
(318) 445-9843
Get directions: [To here](#) - [From here](#)

PAMELA WUZ HERE

Chuck E. Cheese's Coupons
Any Game. Any Ride. Just One Token.
That's 25c Fun at **Chuck E Cheese's!**
www.ChuckE Cheese.com

- A **Chuck E Cheese's** - 1725 Metro Dr
- B **Chuck E Cheese's** - 3555 Ambassador Caffery
- C **Chuck E Cheese's** - 11324 Boardwalk Dr
- D **Chuck E Cheese's** - 3221 E Prien Lake Rd
- E **Chuck E Cheese's** - 2001 Airline Dr # 2001
- F **Chuck E Cheese's** - 7680 Andrea Dr
- G **Chuck E Cheese's** - 7000 Veterans Memorial Blvd
- H **Chuck E Cheese's** - 1755 Martin Luther King Blvd

1 2 3 4 [More results](#) [Clear results](#)

Google

Callback

Eiffel Tower
75007 Paris
France
01 44 11 23 23
Get directions: [To here](#) - [From here](#)

Google

Ads by Google

Eiffel Tower
Book dinner, lunch or just a visit to the Eiffel Tower on Viator.
www.viator.com/eiffel-tower

- A **Eiffel Tower**
- B **Hotel de la Motte Picquet - Eiffel Tower Paris**
- C **CADRAN DESIGN HOTEL EIFFEL TOWER**
- D **Eiffel Tower** - Parc du Champ de Mars
- E **Hotel Relais Bosquet Paris - Paris Eiffel**
- F **Eiffel Tower** - 86, Rue de la Fédération
- G **Hotel near the Eiffel Tower** - Hotel de Londres
- H **3 stars Eiffel Tower Hotel Paris** - 19, Rue du

1 2 3 4 [More results](#) [Clear results](#)

Result List

AdSense for Maps: Maps Ad Unit

Key Zip or Address Find Zipcode or cl

Map Satellite Hybrid Terrain Zips ZIP Hybrid

Los Angeles

Ad by Google

[Fun Things To Do LA](#)
What to do in LA?
Free Weekend Guides,
Fashion, Fun & More -
Free!
[www.DailyCandy.com](#)

[Art Institute Of Chicago](#)
For Art Institute Of
Chicago Art Institute
Of Chicago Here
[MastStoreOnline.com/C](#)

Map data ©2009 Tele Atlas, Zip Map: US Naviguide.com -

Los Angeles, CA

Select a ZIP Code

[Pictures](#)

[Talk of the Town](#)

Information [Map](#) [Coupons](#) [Blog](#) [Offers](#) [Lists](#)



Signup to receive our 'Neighborhood Times' email

Receive coupons & reviews weekly from all your favorite merchants from Los Angeles, CA.

Subscribe

Los Angeles

Ad by Google

[Ruth's Chris Steak House](#)
The Home of
Serious Steak.
Easy Online
Reservations.
[www.RuthsChris.com](#)

Map data ©2009 Tele Atlas, Zip Map: US Naviguide.com -

- [Featured Businesses](#)
- [Local Deals](#)
- [Reviews](#)
- [Merchant Feed](#)
- [Active Businesses](#)

View all merchants by:

All Categories

Email This Page To a Friend

Merchant Circle

USNaviguide Zip Maps

AdSense for Maps: Maps Ad Unit

```
var pub_id = pub-1234123412341234;  
opts = {  
  maxAdsOnMap : 2,  
  style: 'adunit',  
  channel: '12345678'  
};
```

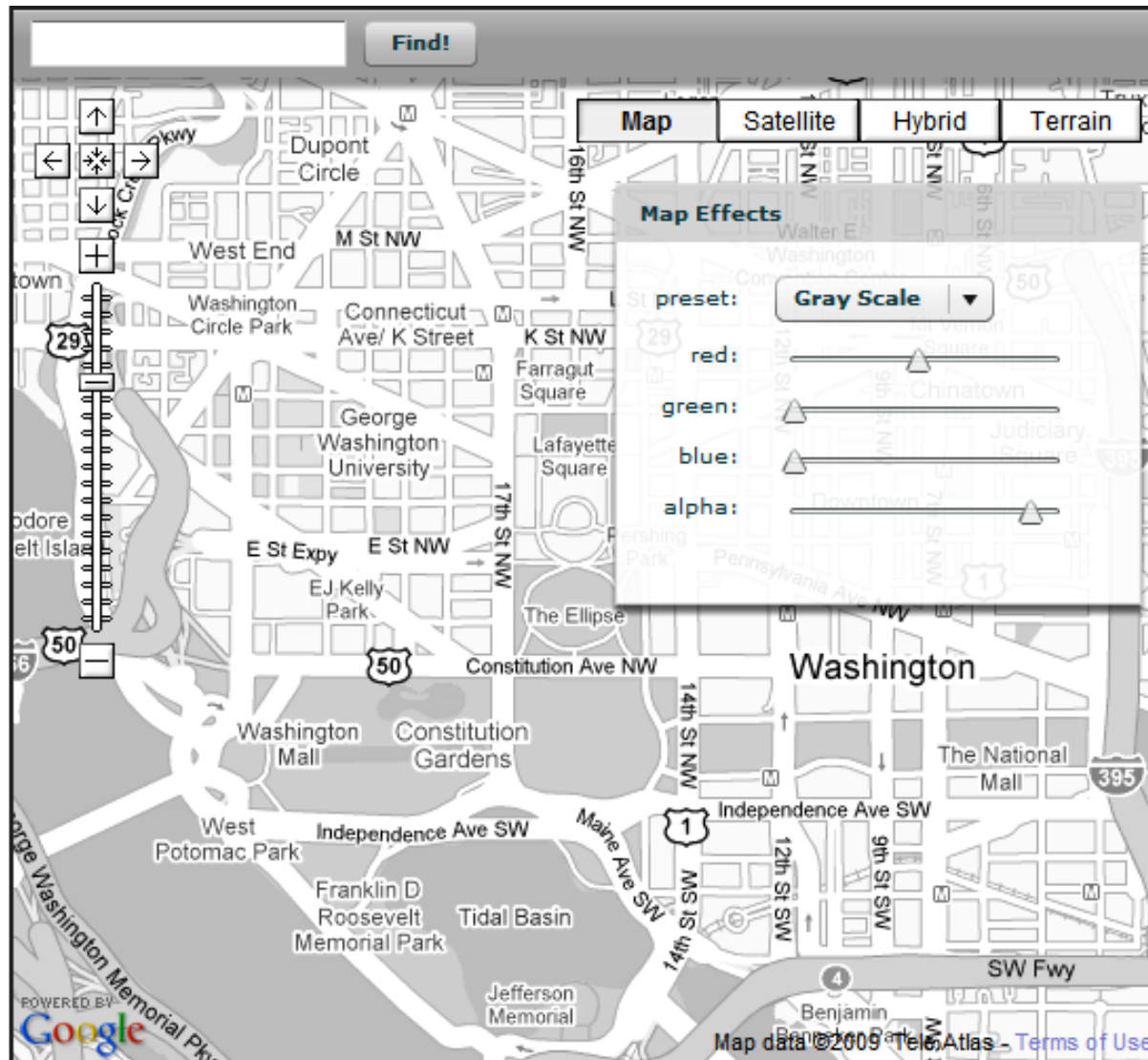
```
adsManager = new GAdsManager(map, pub_id, opts);  
adsManager.enable();
```

OFFICE HOURS! NOW!

Flash Re-coloring



Flash Color Transform



Re-Coloring

Flash Color Transform

```
var mapPart:* = gMap.getChildAt(1);  
var mapArea = mapPart.getChildAt(0);  
var R:Number = 0.299;  
var G:Number = 0.587;  
var B:Number = 0.114;  
var matrix:Array = [  
    R, G, B, 0, 0,  
    R, G, B, 0, 0,  
    R, G, B, 0, 0,  
    0, 0, 0, 1, 0];
```

```
var CMF:ColorMatrixFilter = new ColorMatrixFilter(matrix);  
mapArea.filters = [CMF];
```

Flash Color Transform



Grey Loading



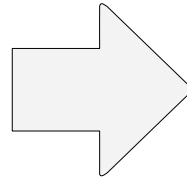
Grey Routes

3d Flash





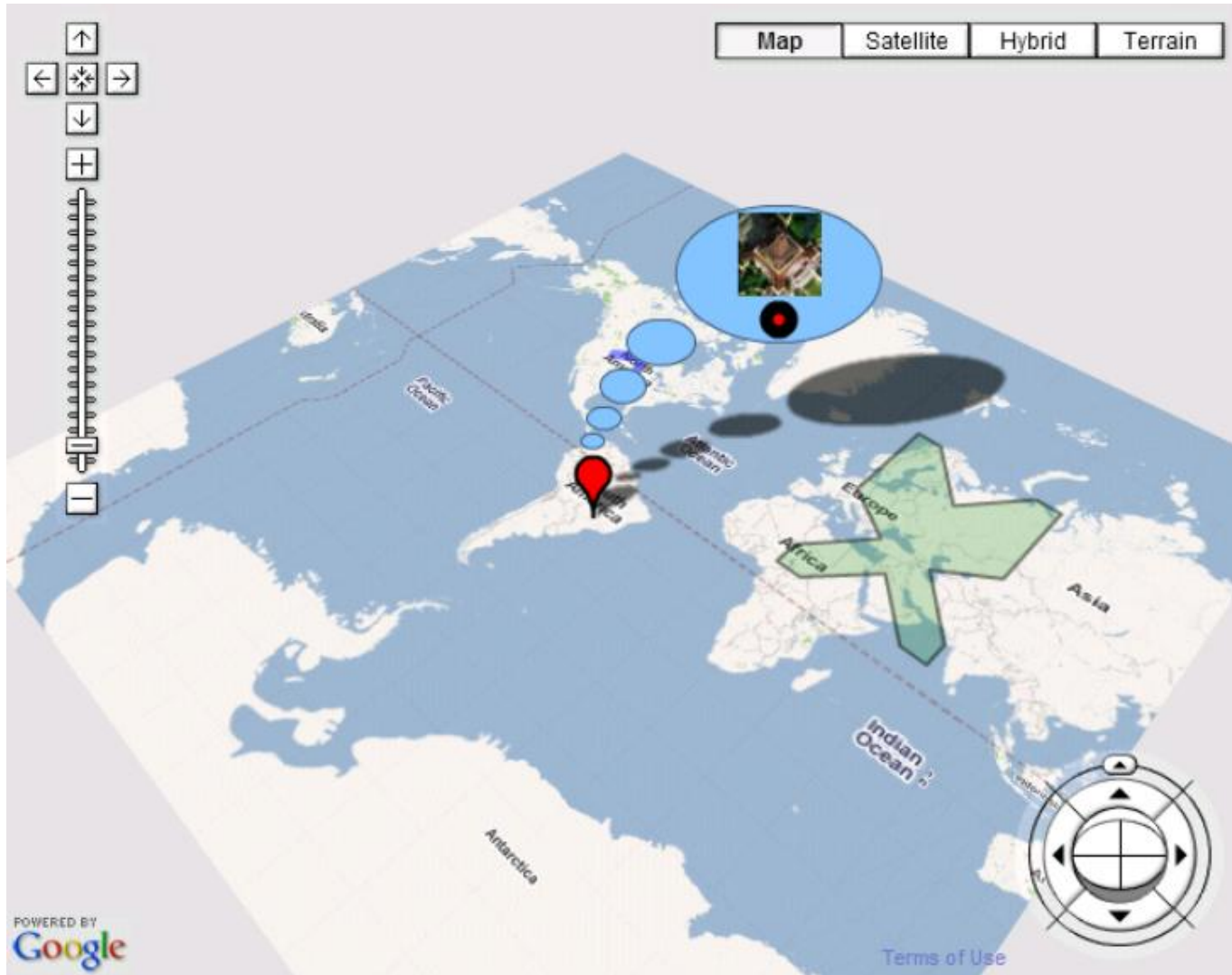
Solution: 3d Perspective



Demo

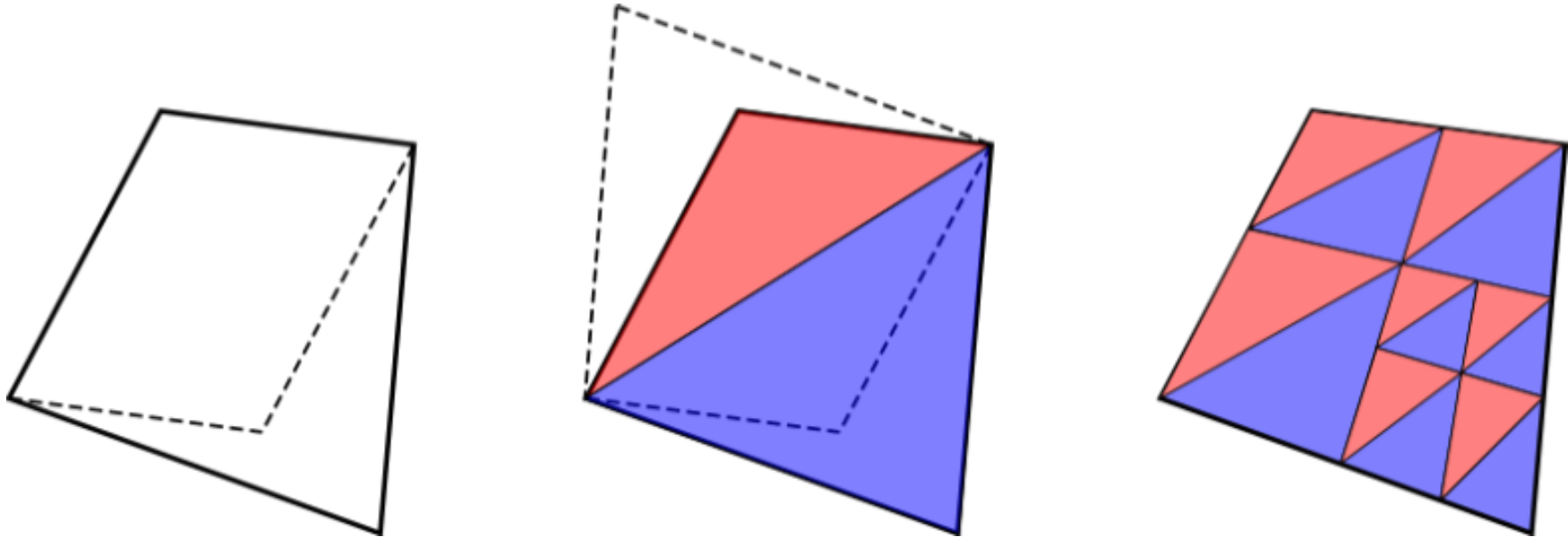


3d Perspective + Overlays + Controls





Perspective Tile Rendering



Flash 10: native perspective transformations

Flash 9: native affine transformations

Orthogonal projection: full speed

Simple perspective: bitmap-fill two triangles

Accurate perspective: bitmap-fill many triangles



3d Perspective + Overlays + Controls

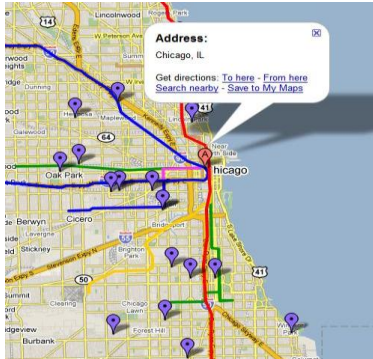
```
private function onMapReady(e:MapEvent):void {  
    map.view = View.VIEW_PERSPECTIVE;  
  
    map.addControl(new MapTypeControl());  
    map.addControl(new NavigationControl());  
  
    map.setCenter(new LatLng(-33.87205, 151.203874), 9,  
MapType.PHYSICAL_MAP_TYPE);  
}
```



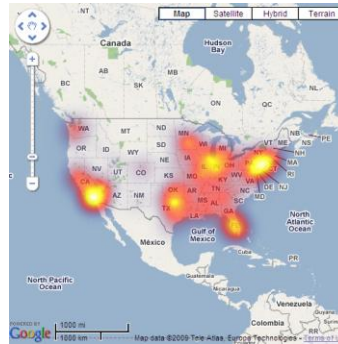
Demos?!

The World of Geo APIs

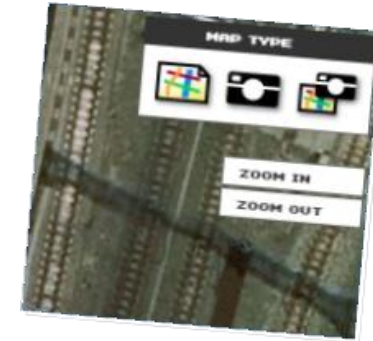
Mapplets



JS Maps APIs



Maps API for Flash



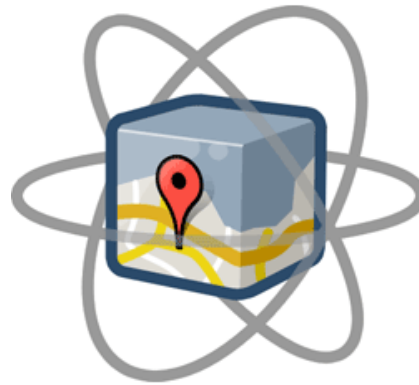
Panoramio API



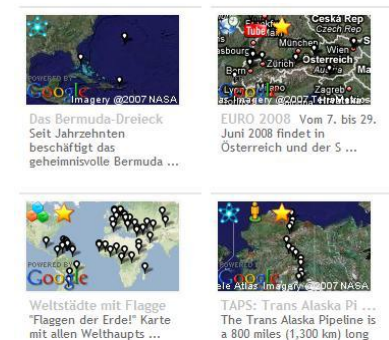
KML



Maps Data API



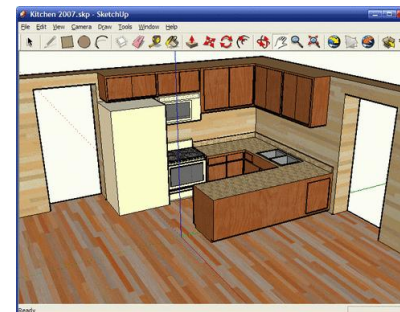
Static Maps APIs



Earth API



SketchUp API



Get Qualified.

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



Gain developer API knowledge. Get Google cred. Make more money.

Designed for professionals who currently develop or want to develop applications that use Google APIs, the Google Qualified Developer program can help you become a more successful developer for free.

Increase your reach.

Post your public profile in the [Solutions Marketplace](#) and reach companies around the world who are interested in hiring Qualified Google Developer experts.

Build your expertise.

Access our [Study Guides](#), where you'll find links to existing training resources. Use these materials to expand and hone your Google API knowledge so you can better serve your clients.

Promote your business with Google's name recognition.

The Google Qualified Developer program is available to both [individuals and companies](#). Receive distinction as a skilled professional. Plus, receive the Google Qualified Developer logo and other benefits.

The Google Qualified Developers program also provides convenience and confidence for Google partners and customers in need of development assistance.

Gadgets and **Gadget Ads** and **Maps APIs** are currently supported.

Q & A

Post your [questions](#) for this talk on Google Moderator:
code.google.com/events/io/questions

Google™

