



VISUALIZING GEOGRAPHIC DATA

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MASH-UPS

SPOT

Messages

Map Legend FAQ

Type Time Messenger

Messenger: 0-7459227 (29 Messages)

- Check in! 3 Hours ago (7:32 AM) 0-7459227
- Track Pro 3 Hours ago (7:03 AM) 0-7459227
- Track Pro 4 Hours ago (6:53 AM) 0-7459227
- Track Pro 4 Hours ago (6:43 AM) 0-7459227
- Track Pro 4 Hours ago (6:33 AM) 0-7459227
- Track Pro 4 Hours ago (6:14 AM) 0-7459227
- Track Pro 4 Hours ago (6:05 AM) 0-7459227
- Track Pro 5 Hours ago (5:37 AM) 0-7459227
- Track Pro 5 Hours ago (5:23 AM) 0-7459227
- Track Pro 5 Hours ago (5:14 AM) 0-7459227
- Track Pro 5 Hours ago (5:03 AM) 0-7459227

Map

Map Satellite Hybrid Terrain

Map of Hawaii showing a route along the coast with orange and black markers.

For Rent For Sale Rooms Sublets

City: Boston Price: \$1500 - \$2000 Show Filters Refresh List

Powered by Craigslist and Google Maps

Map Satellite Hybrid

Map of Boston with various property listings marked on the map.

Price	Type	Description	City	Year
\$2000	5br	5 Bedroom apartment for rent.	Boston	15111
\$1800	2br	House for Rent.	Metrose	15111
\$1500	3br	private office Framingham.	Concord St.	15111
\$1500	2br	Large 2 Bedroom apt for rent	Boston	15111
\$1500	2br	Contemporary, Hardwood Floors,	Watertown	15111
\$1500	2br	5 Room - Updated Kitchen & Bath	Boston	15111
\$1500	2br	2 Family Apt. in Boston's Back Bay	Boston	15111
\$1695		Waterfront townhouse on	Stoneham	15111
\$1800	2br	Convenient 2 Bedroom	Eastern Ave	15111
\$1500	2br	Large 2 room - 3 Room apt on a	Everett	15111
\$1500	2br	Cathedral Ceiling, Totally Remode	Somerville	15111
\$1595	3br	Large 3 Bedroom Detached	Boston	15111
\$1595	3br	600 Square feet modern	Walden	15111
\$1595	1br	apartment near and hot water	Walden	15111
\$2000	2br	Waterfront 2 Bed/2 Bath House	Largo	15111
\$1535	1br	Large one bedroom apartment	Walden	15111
\$1535	2br	1 and 1/2 month free! Like new	Walden	15111
\$1535	2br	1 and 1/2 month free! Like new	Walden	15111
\$1535	2br	Large 2 Bedroom 2 Bathroom	Boston	15111
\$1535	2br	1 and 1/2 month free! Like new	Walden	15111
\$1550	2br	Beautifully renovated semibox	Boston	15111
\$1625	2br	1100 Square feet near and hot	Walden	15111
\$1675	2br	Recently renovated 1200 square	Walden	15111
\$1675	2br	Super modern 1100 square feet 2	Walden	15111
\$1617	2br	Brand new! Close to major transit	Wilmington	15111
\$1845	2br	Quaint Highlands home see our	Walden	15111
\$1695	2br	Spacious, newly renovated 2 bed	Newton	15111
\$1750	2br	Brand new 2 bed apt just outside	Cambridge	15111
\$1545	2br	10 Minutes From Boston Great	Walden	15111

City Buses

SMART Campus Routes

415-420 445-475 450 460 465

495 510-515 560 610-615 851

DDOT Campus Routes

14 16 18 23 29 31 36 38 47

53 78

WSU Megabus Stop

Campus Shuttles

DMC Central Campus

Henry Ford Hospital

Wayne State University Main Campus

Wayne State University Medical Campus

Show All Campus Routes

Bikes

Bike Racks

WSU Parking

Map showing a green route through a city grid.

What's your favorite map tool?

MAPPING API PROVIDERS

Google Maps (<http://code.google.com/apis/maps/>)

Yahoo Maps (<http://developer.yahoo.com/maps/>)

MapQuest (<http://developer.mapquest.com/>)

ESRI (http://www.esri.com/software/mapping_for_everyone/api/)

US Map and Data (<http://gos2.geodata.gov/wps/portal/gos>)

NOAA (<http://weather.noaa.gov/weather/metar.shtml>)

API Formats: [ActionScript](#), JavaScript, Silverlight, Web Services...

Have you used any of these?

GEOSPATIAL IDEAS

WWW

Show an address - a

Find closest - $f(a)$

Office locations - A

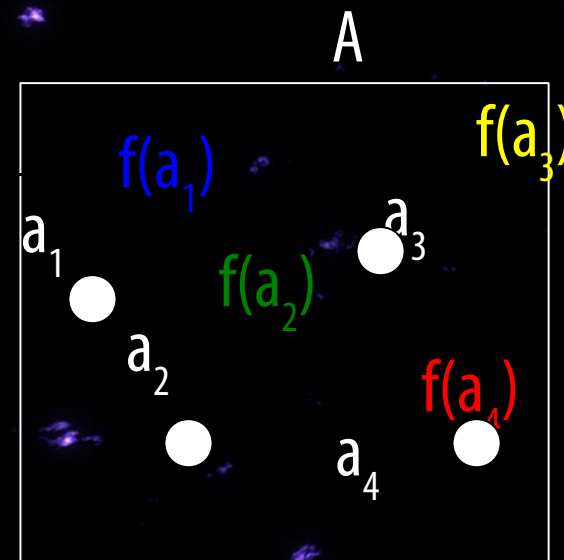
Real-time road slipperiness $f(A,t)$

Jostens

Order history - A^*

Product buyrates - $f(A)^*$

Confirmations - a



* May require premium license.
What are your ideas?

EXAMPLES: TOUR DE FLEX

Tour de Flex - Geocoding Nudger

http://www.adobe.com/devnet-archive/flex/tourdeflex/web/#sampleId=15202;docIndex=0;illustIndex=0

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Install Tour de Flex QuickStart

Geocoding Nudger

Geocoding Nudger Sample

Google Maps Geocoding Demo

Enter address: Sydney AU or lat/Ing:



Source Project Home Page

```
<?xml version="1.0" encoding="utf-8"?>
<!--
Copyright 2008 Google Inc.
Licensed under the Apache License, Version 2.0:
http://www.apache.org/licenses/LICENSE-2.0
```

About | ©2009 Adobe Inc, All Rights Reserved | Version: 1.2.1 | List Version: 2010-11-30 | Samples: 526

EXAMPLES: GOOGLE CODE

Google Maps API for Flash Example Code – Google Maps API for Flash – Google Code

http://code.google.com/apis/maps/documentation/flash/examples/index.html

Google

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Google Maps API for Flash

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Sign up for an API key
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Maps API for Flash
Developer Guide

- Tutorials
 - Flex SDK
 - FlexBuilder
 - Flash CS3
- Basics
- Events
- Controls
- Overlays
- Services
- Map Types
- 3D Maps
- API Reference

Code Samples:
Demos

Examples

More Resources:
Articles
Presentations
Known Issues
Changelog **New!**
Utility Library

Maps JavaScript API V3
Home Page
Documentation

Maps Javascript API V2
(Deprecated API)
Home Page
Documentation

Maps Data API
(Deprecated API)
Home Page
Documentation

Maps API Web Services

Google Maps API for Flash Example Code

All of the ActionScript examples contained within the Google Maps API documentation set are listed below for quick reference.

Map Examples

- [HelloWorld.mxml](#)
- [MapSimple.fla \(Flash CSS3 File\)](#)
- [MapMarkers.mxml](#)
- [MapAnimate.mxml](#)
- [MapInfoWindow.mxml](#)

Event Examples

- [EventSimple.mxml](#)
- [EventContext.mxml](#)
- [EventClosure.mxml](#)
- [EventRemoval.mxml](#)

Controls Examples

- [ControlSimple.mxml](#)
- [ControlPositioning.mxml](#)
- [TextualZoomControl.as](#)
- [ControlMapTypes.mxml](#)

Overlay Examples

- [MarkerSimple.mxml](#)
- [MarkerDrag.mxml](#)
- [IconSimple.mxml](#)
- [PolylineSimple.mxml](#)
- [PolylineEncoding.mxml](#)
- [PolygonSimple.mxml](#)
- [GroundOverlaySimple.mxml](#)

Services Examples

- [GeocodingSimple.mxml](#)
- [DirectionsSimple.mxml](#)
- [DirectionsAdvanced.mxml](#)

GEOCODING

For a provided address, or
list of addresses

*Jostens
3601 Minnesota Drive Suite 400
Minneapolis, MN 55435*

Contact geocode API
(google)

*http://maps.google.com/maps/geo?
q=Jostens%2C+3601+Minnesota+Drive+Suite+400%2C
+Minneapolis%2C+MN%2C+55435
&output=csv&sensor=false&key=[API_KEY]*

Parse response for
coordinates (φ , λ)

200,9,44.8617807,-93.3269258

GOOGLE MAPS API

API (1.3)

<http://code.google.com/apis/maps/documentation/flash/reference.html#InfoWindowOptions>

<file:///Users/jeff/Downloads/sdk/docs/index.html>

API Key (google)

<http://code.google.com/apis/maps/signup.html>

Terms

Your Maps API Implementation must be generally accessible to users without charge. Internal-only sites need to have the premier license.

There is an upper bound on the geocode requests per unit time.

Display the Content with a corresponding Google map

<http://code.google.com/apis/maps/terms.html>

Tutorials

<http://code.google.com/apis/maps/documentation/flash/tutorial-flex.html>



APPLICATION - CARTOMEDES



1. Load flashvars preferences
2. Create a google map instance
3. Load XML data
3. Geocoding
4. Rank numeric data
5. Draws circles of varying colors/radii.
6. Crop boundaries to visible data
7. Respond to user toggling/filtering
8. Display mouse coordinates Lat/Long

CARTOMEDES

Mozilla Firefox

file:///Users/jeff/Documents/Adobe Flash Builder 4/Cartomedes/bin-debug/Cartomedes.html

sourceforge cartomedes

My Delicious Bookmark on Delicio... National Digital Fore...

Disable Cookies CSS Forms Images Information Miscellaneous Outline Resize Tools View Source Options

file:///Users/j...Cartomedes.html SourceForge.net: cartomedes Pr... Manage project developer per...

Display Features

- BOUNDARIES
- AREA
- POPULATION

Data Filter

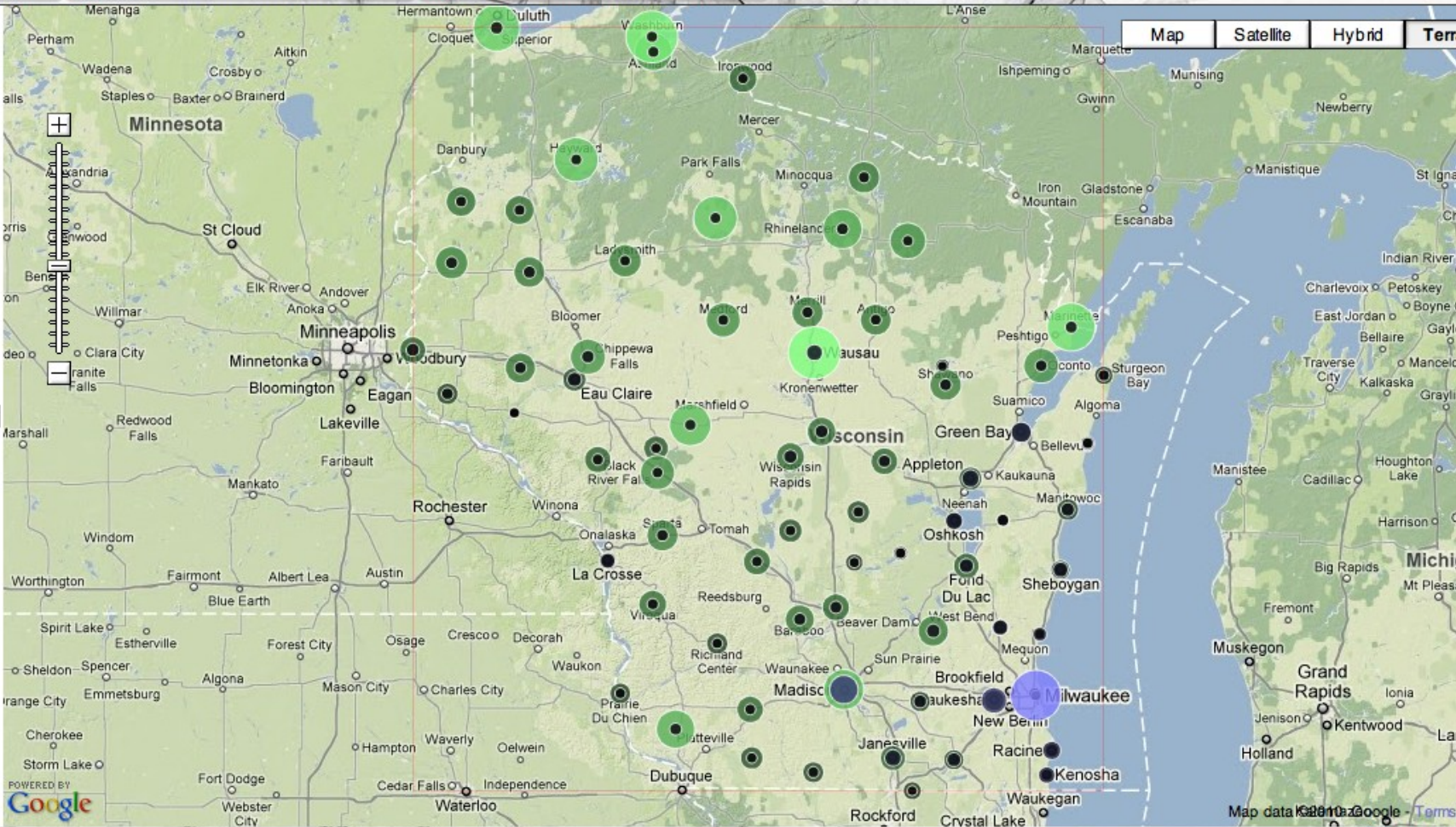
STATE:

▼

Coordinates

Latitude (ϕ): 45.385°

Longitude (λ): -92.836°



Map Satellite Hybrid Terr

Map data © 2010 Google - Terms

YSlow

LESSONS LEARNED



Geocoding – wait at least ~ 100ms between calls or get an error back.

Proxies – wreck havoc sometimes/somewheres

Connection - If you start seeing blank map backgrounds, you've lost connectivity.

Speed – CPU and bandwidth intensive for large datasets.

Flex: don't declare an .mxml file recursively of itself, will cause a heap overflow.

QUESTIONS?

