GeoDjango

Zain Memon

Neighborhoods

Mission

FOLLOW THIS NEIGHBORHOOD

VIEW: Everything | Neighbor messages | Media mentions | More...

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POST COMMENT

6 MEETUPS

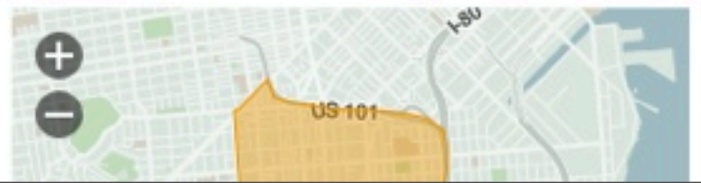
These neighbors receive Mission news via EveryBlock every day:

You're 60 seconds from creating an account and joining them...

Sign up via Facebook

or

Enter your e-mail address Sign up



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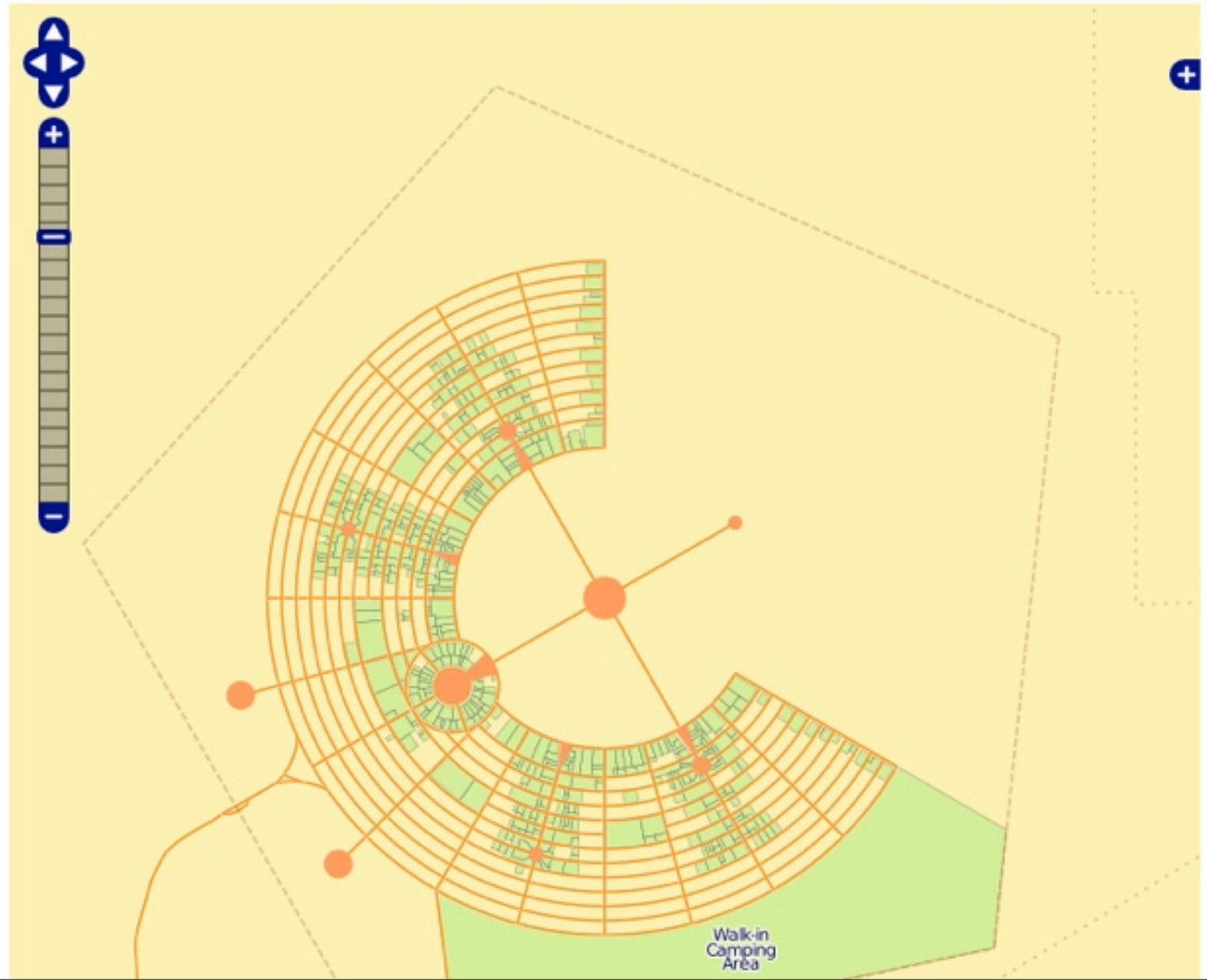
Theme Camps - Art Installations - Playa Events - Mutant Vehicles

Map



[weeplaces video]

trulia crime maps beta

San Francisco

Like 5K Tweet

MAP OPTIONS
Heatmaps, Crimes ...

«

2408 crimes in this area add a comment »»

- [x] Heatmap

0-5 35 60 85 115+

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From 9/21 to 9/24.

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MOST CRIMES
See dangerous intersections

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51 crimes in Mission Bay, click to see d

trulia

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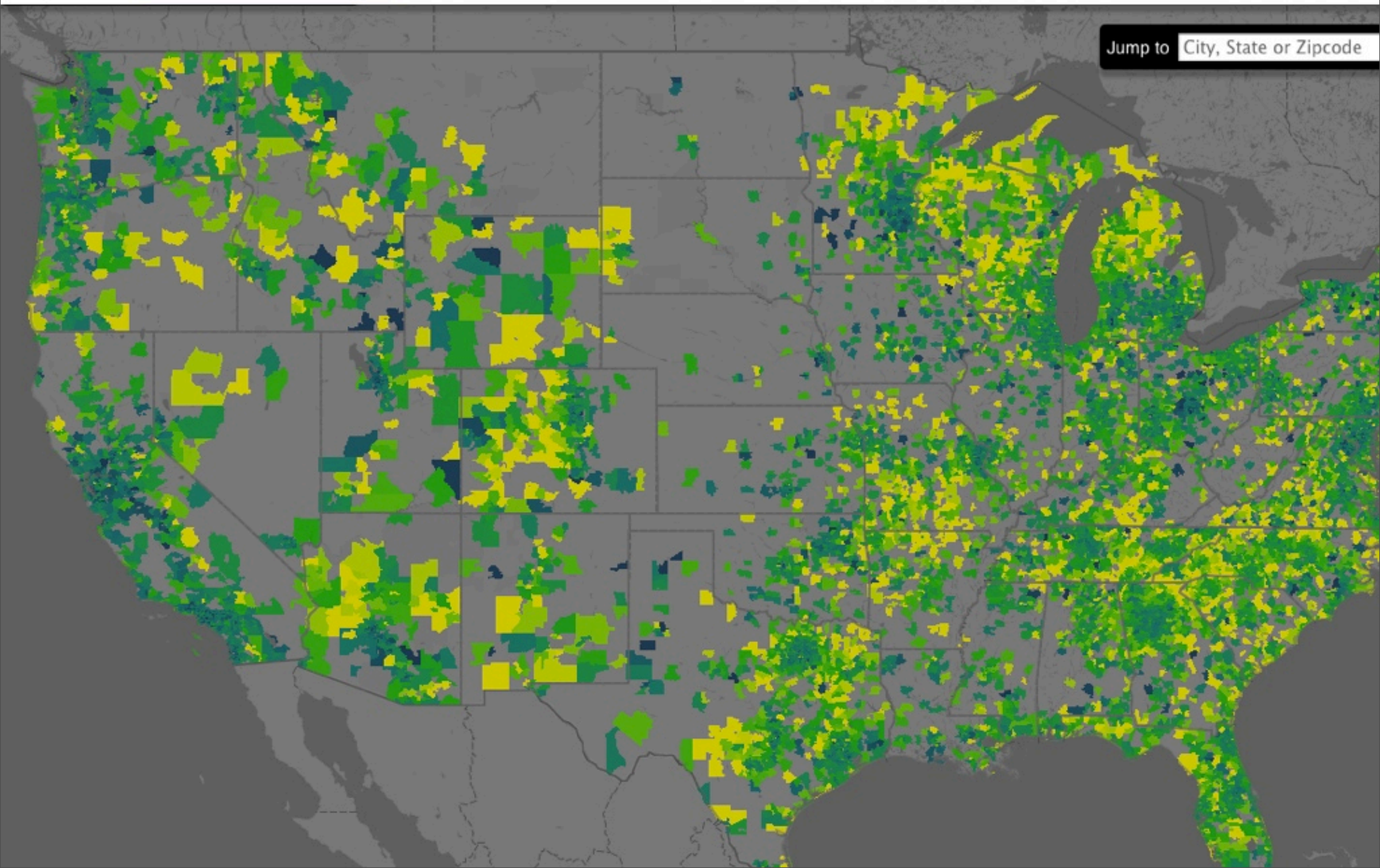


Intro to Django

Django

Object-Relational Mapper (ORM)
Automatic Admin Interface
URL Routing
Templating
Caching

ORM

Object-Relational Mapper (ORM)

```
class Restaurant(models.Model):
    name = models.CharField()
    rating = models.IntegerField()
```

```
# saving a new record to the database
r = Restaurant()
r.name = "Siamone Thai"
r.rating = 5
r.save()
```

Object-Relational Mapper (ORM)

```
class Restaurant(models.Model):
    name = models.CharField()
    rating = models.IntegerField()
```

```
# retrieving a record from the database
r = Restaurant.objects.get(rating=5)
print r.name # "Siamone Thai"
```

Admin

Automatic Admin Interface

```
from django.contrib import admin
from myproj.myapp.models import Restaurant

admin.site.register(Restaurant)
```

Site administration | Django site admin

http://localhost:8000/admin/

Google

Site administration | Django sit...

Django administration

Welcome, admin. Documentation / Change password / Log out

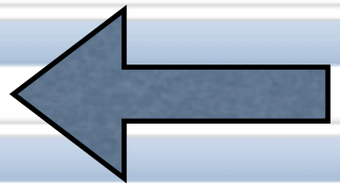
Site administration

Auth		
Groups	Add	Change
Users	Add	Change

Burningplate		
Restaurants	Add	Change

Sites		
Sites	Add	Change

Recent Actions
My Actions
None available



Done

1024x768

Add restaurant | Django site admin

http://localhost:8000/admin/BurningPlate/restaurant/add/

Google

Add restaurant | Django site ad...

Django administration

Welcome, admin. Documentation / Change password / Log out

Home › Restaurants › Add restaurant

Add restaurant

Name: Siamone Thai

Save and add another | Save and continue editing | Save

Done

1024x768

Select restaurant to change | Django site admin

http://localhost:8000/admin/BurningPlate/restaurant/

Google

Select restaurant to change | Dj...

Django administration

Welcome, admin. Documentation / Change password / Log out

Home › Restaurants

The restaurant "Azteca" was added successfully.

Select restaurant to change

Add restaurant

Restaurant
Azteca
Siamone Thai

2 restaurants

Done

1024x768

Django

A full stack framework

GeoDjango

OGC Geometries on models
Geo-Queries with the ORM
Bindings to GEOS, GDAL, GeoIP
Geo-support in the admin

OpenLayers

Google Maps Earth

KML

GML

WKT

GeoJSON

GeoRSS

geodjango

GDAL

GEOS

PROJ.4

PostGIS

Spatial PostgreSQL

ORACLE

MySQL

Installation

ORM

OGC Geometries on models

```
class Restaurant(models.Model):
    name = models.CharField()
    rating = models.IntegerField()
    pt = models.PointField()

    objects = models.GeoManager()
```

OGC Geometries on models

```
GeometryField       MultiGeometryField
   PointField       MultiPointField
 PolygonField       MultiPolygonField
LineStringField     MultiLineStringField
```

Field Options

Projections

Painlessly convert between SRIDs

```
models.PointField(srid=4326)
```

Geographies

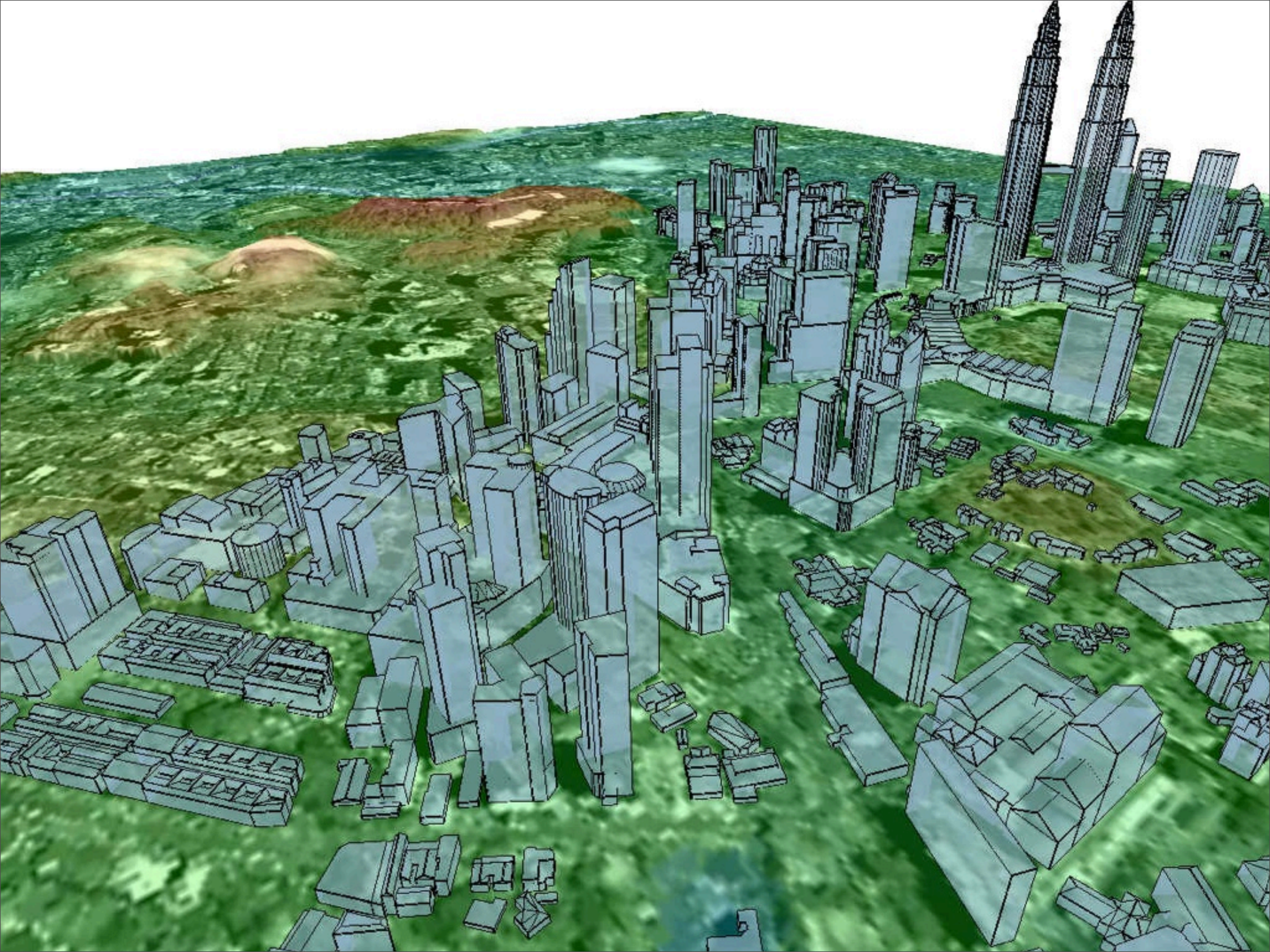
with the PostGIS 1.5 "Geography" Type

```
models.PointField(geography=True)
```

3-D

(not an emoticon)

```
models.PointField(dim=3)
```



Geo Queries

Geo-Queries with the ORM

```
r = Restaurant.objects.get(name='Siamone')

ZipCode.objects.get(poly__contains=r.pt)
```

Geo-Queries with the ORM

```
here = fromstr('POINT(-96.8763 29.9053)')

Restaurant.objects.filter(pt=here)
```

Geo-Queries with the ORM

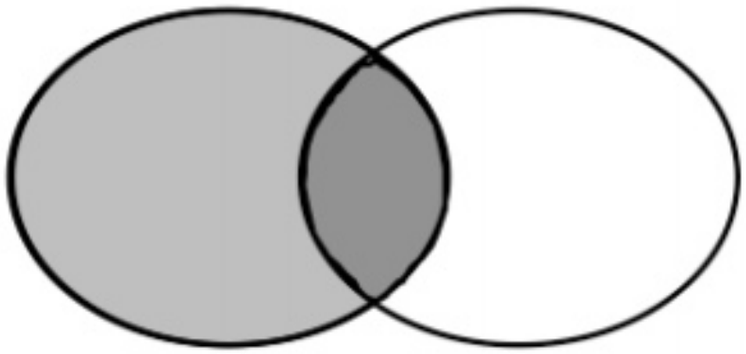
```
here = fromstr('POINT(-96.8763 29.9053)')

Restaurant.objects.filter(
    pt__distance_lt=(here, D(mi=1))
)
```

Geo-Queries with the ORM

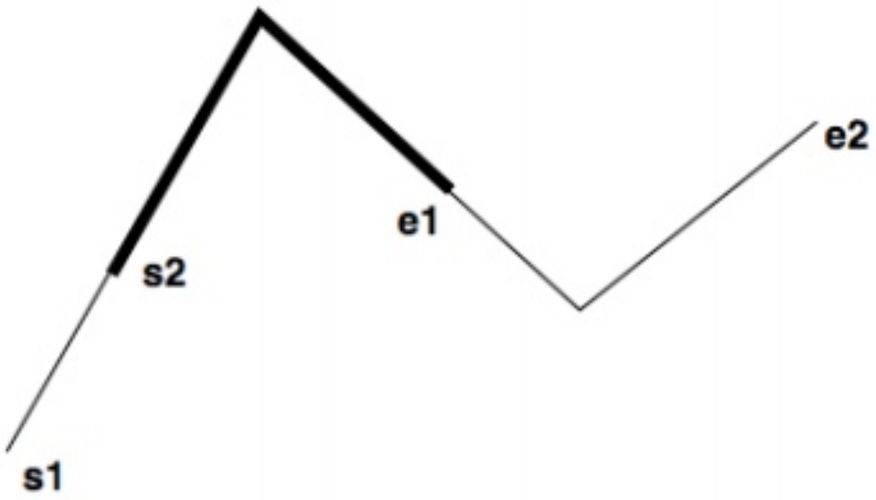
```
z = ZipCode.objects.get(code='94105')

Restaurant.objects.filter(
    pt__within=z.poly
)
```

Overlaps

Polygon/Polygon

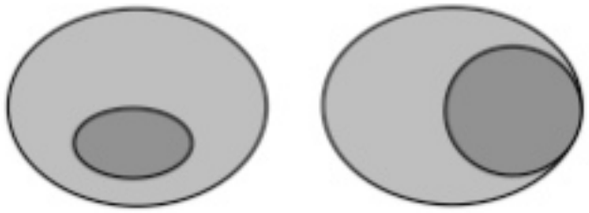


LineString/LineString



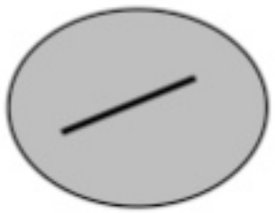
Within

Polygon/Polygon

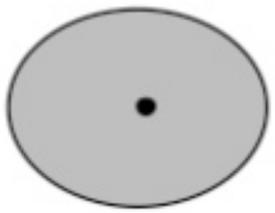


LineString/LineString

Polygon/LineString

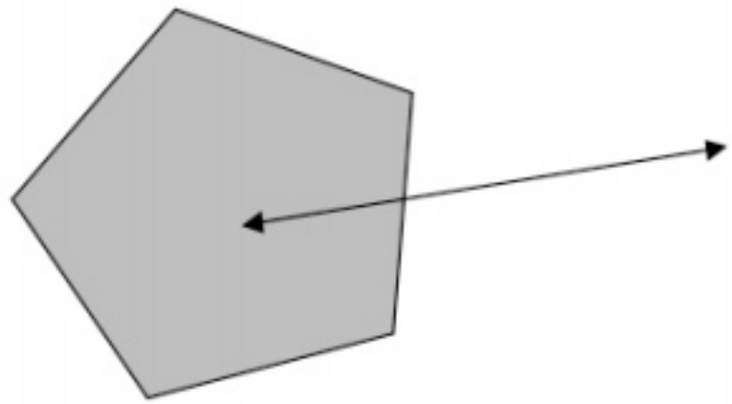


Polygon/Point

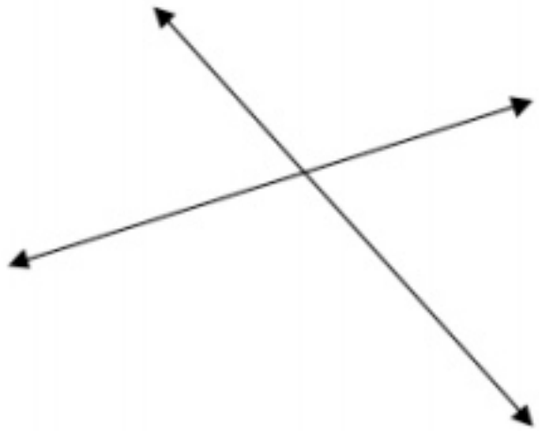


Crosses

Polygon/LineString



LineString/LineString



Bindings

GEOS

```
pt = Point(23.0, 5.0)

poly = Polygon(...)

poly.contains(pt) # True

print poly.wkt # or poly.kml, poly.geojson
```

GDAL

Load in shapefiles and play with them.

```
ds = DataSource('census_blocks.shp')
```

GeoIP

not creepy at all

```
GeoIP().city('72.14.207.99')
```

Admin

The Geo-Admin

```
from django.contrib.gis import admin
from myproj.myapp.models import Restaurant

admin.site.register(Restaurant, admin.OSMGeoAdmin)
```

Django administration

Welcome, **jschrade**. Change password / Log out

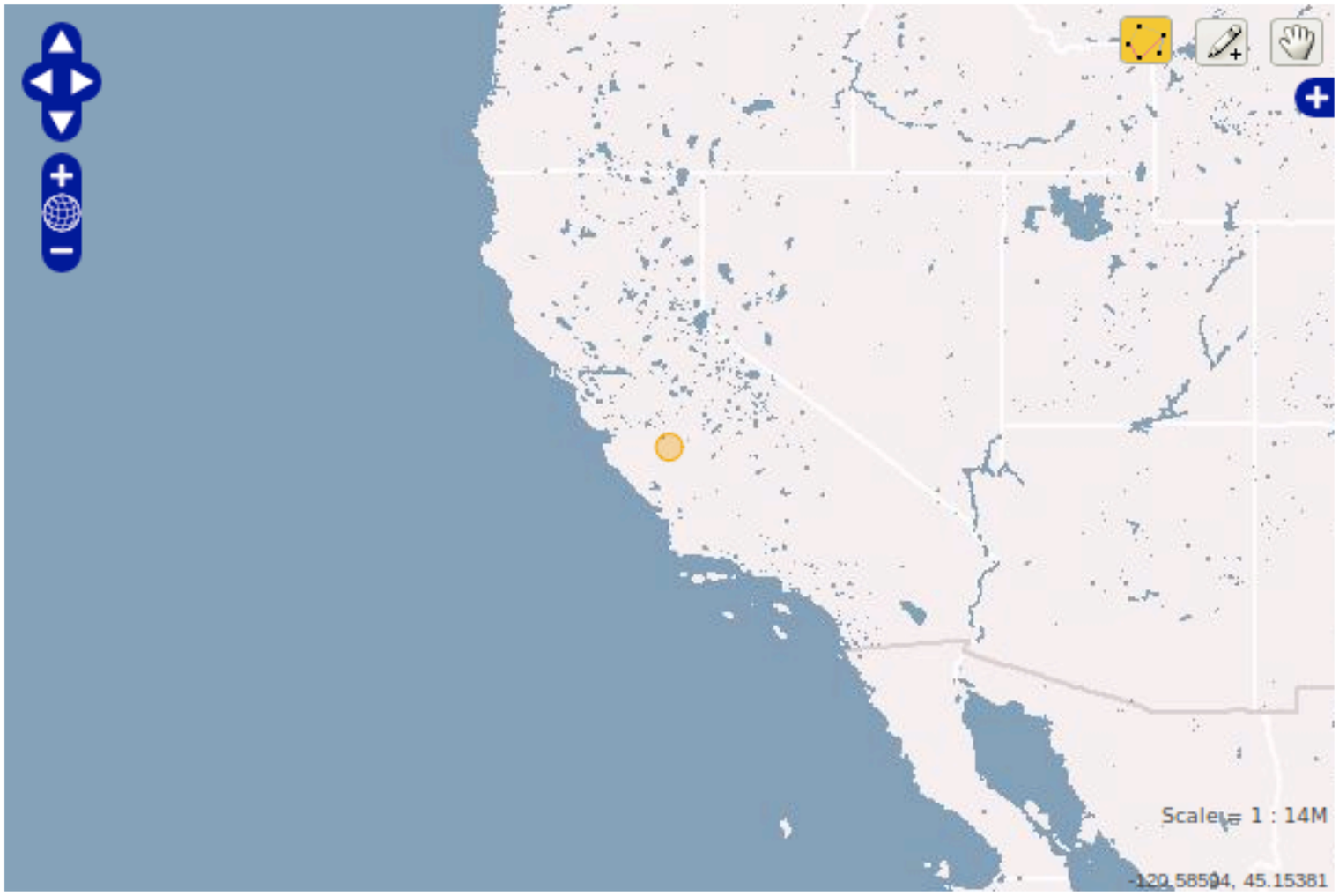
Home › Person › Persons › Person object

Change person

History

Name: William West

Location:



Delete all Features

Delete | Save and add another | Save and continue editing | Save

Geotag

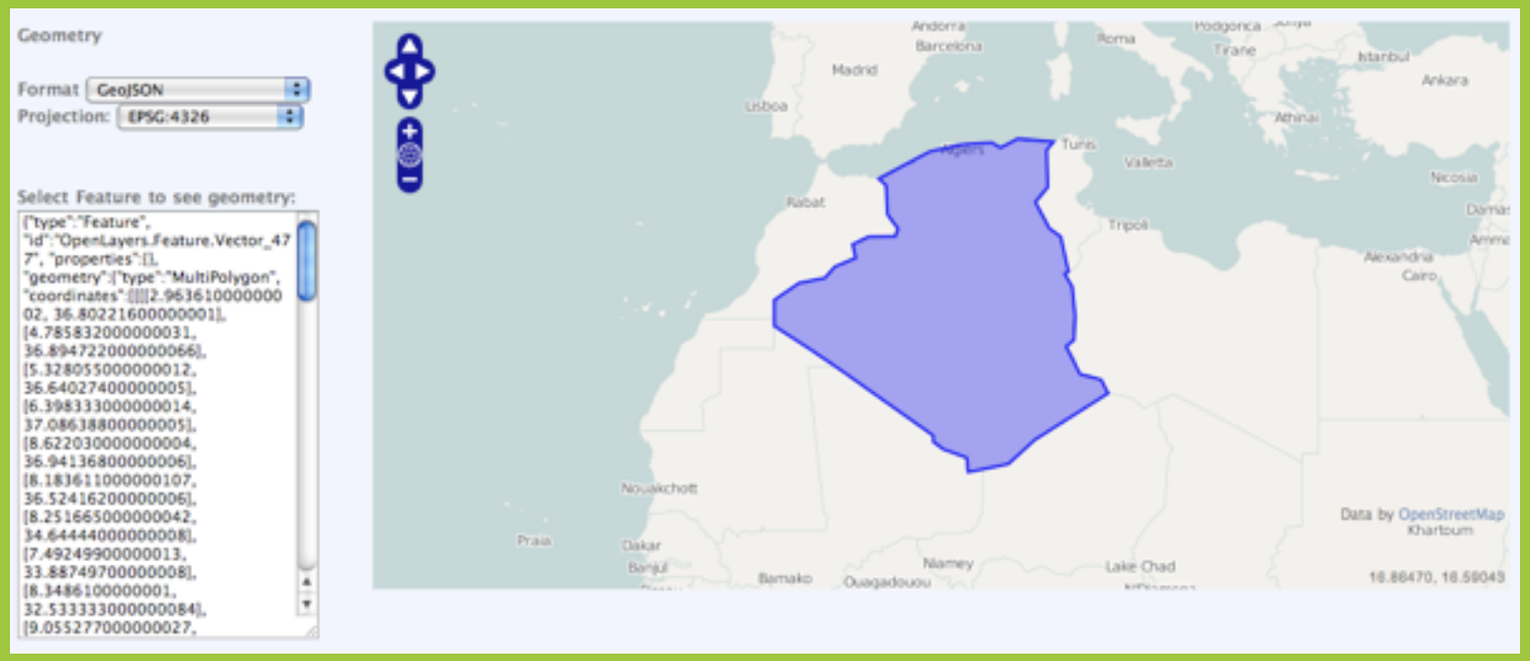
Mark object on the map as either a point, path, or polygon.

Geotag:

Delete all Features

Delete

Save and add another | Save and continue editing | Save



http://bit.ly/shDeeV

Other Libraries

TileStache

TILE ALL OF THE THINGS !

http://tilestache.org

floppy-forms

Map drawing widgets for your forms

http://bit.ly/ug5W2g

vectorformats

Dump to a ton of different formats

http://bit.ly/vicZOd

Taking another look

Neighborhoods

Mission

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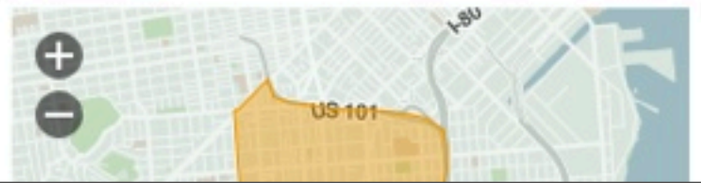

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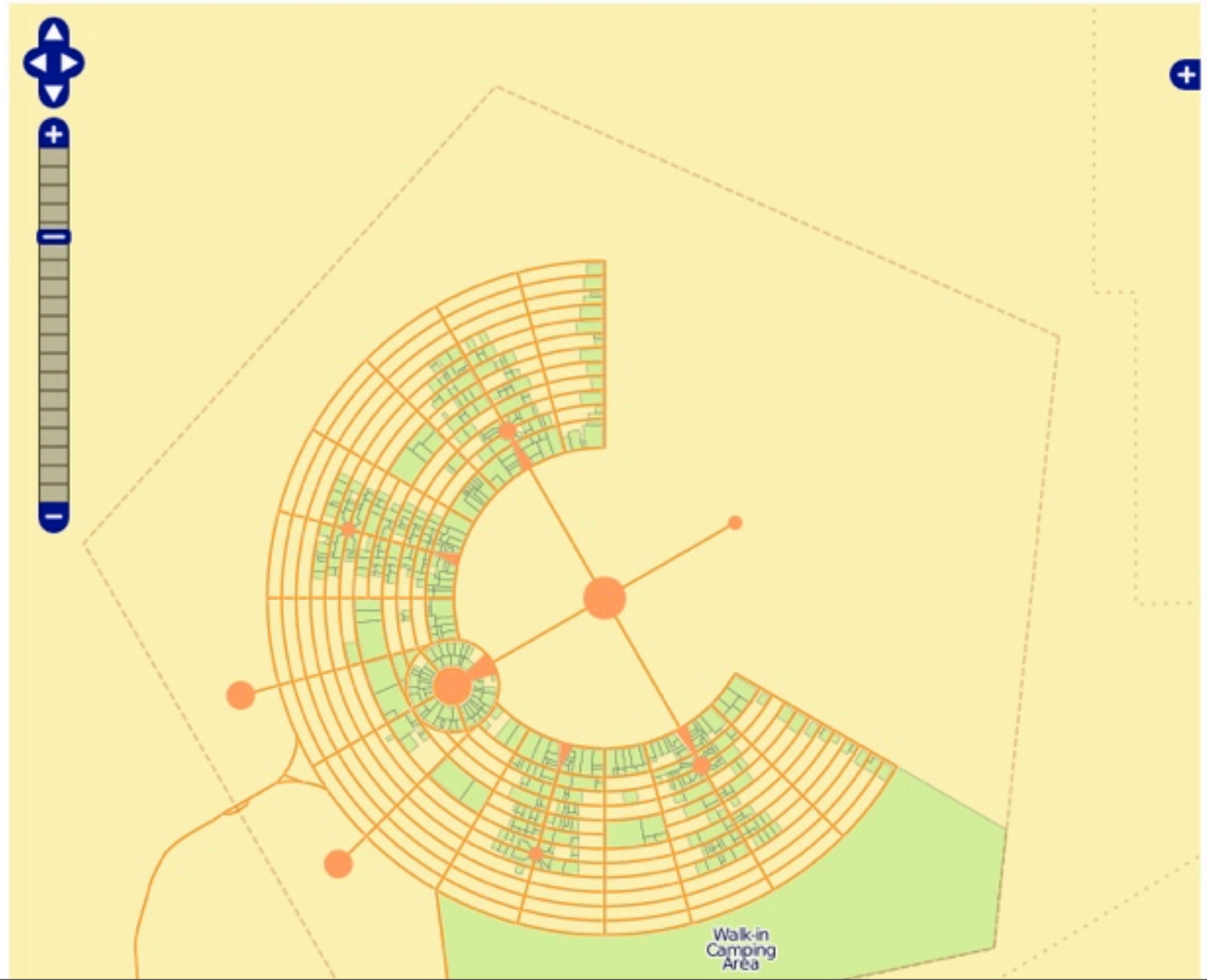

[weeplaces video]

trulia crime maps beta

San Francisco

Like 5K Tweet

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0-5 35 60 85 115+

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trulia

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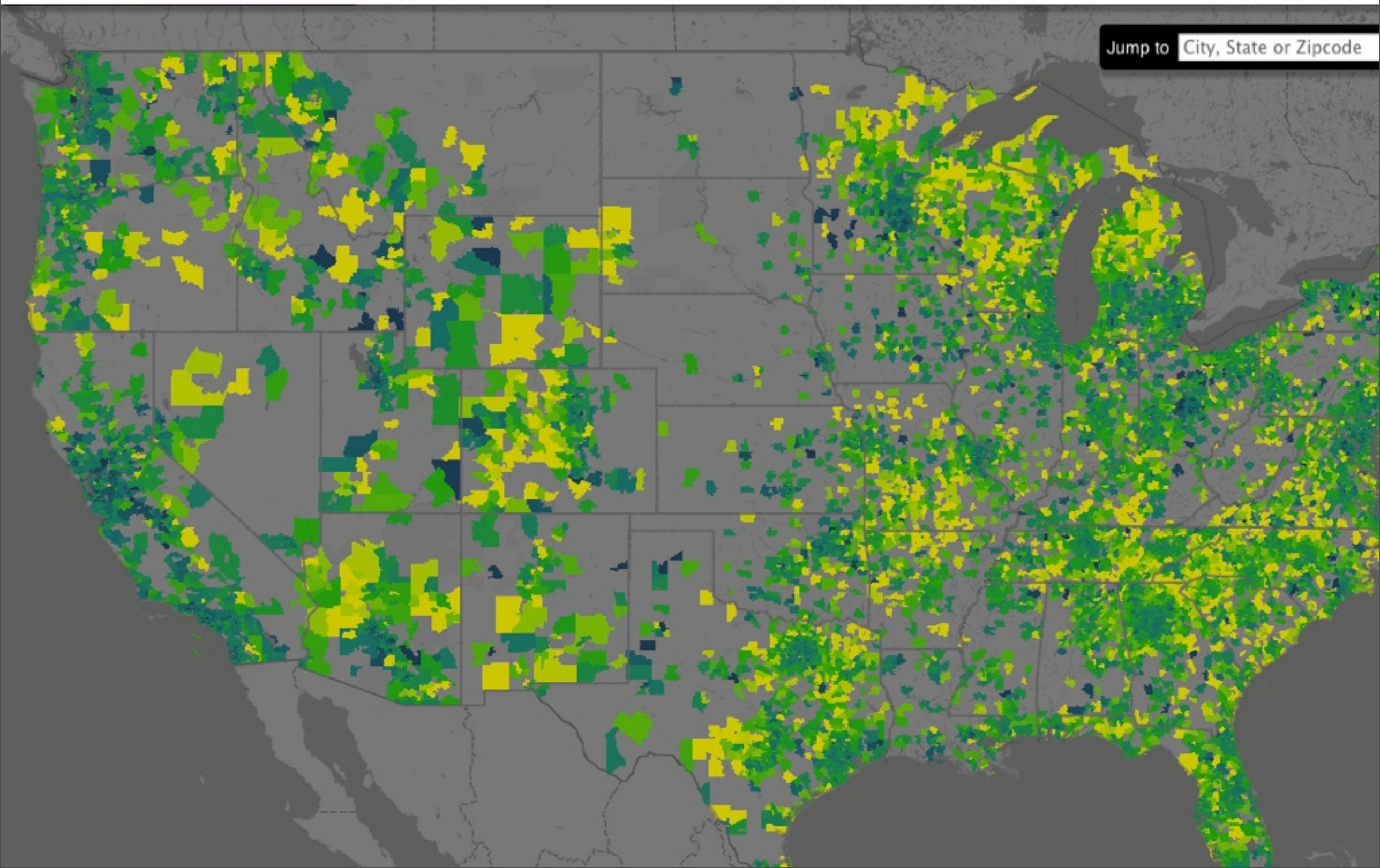

fin