

# Taller #bdw | 4. Día 2

## Cartografía + CartoDB



<https://github.com/hackbdw|4/hackatonData>

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# Contenidos

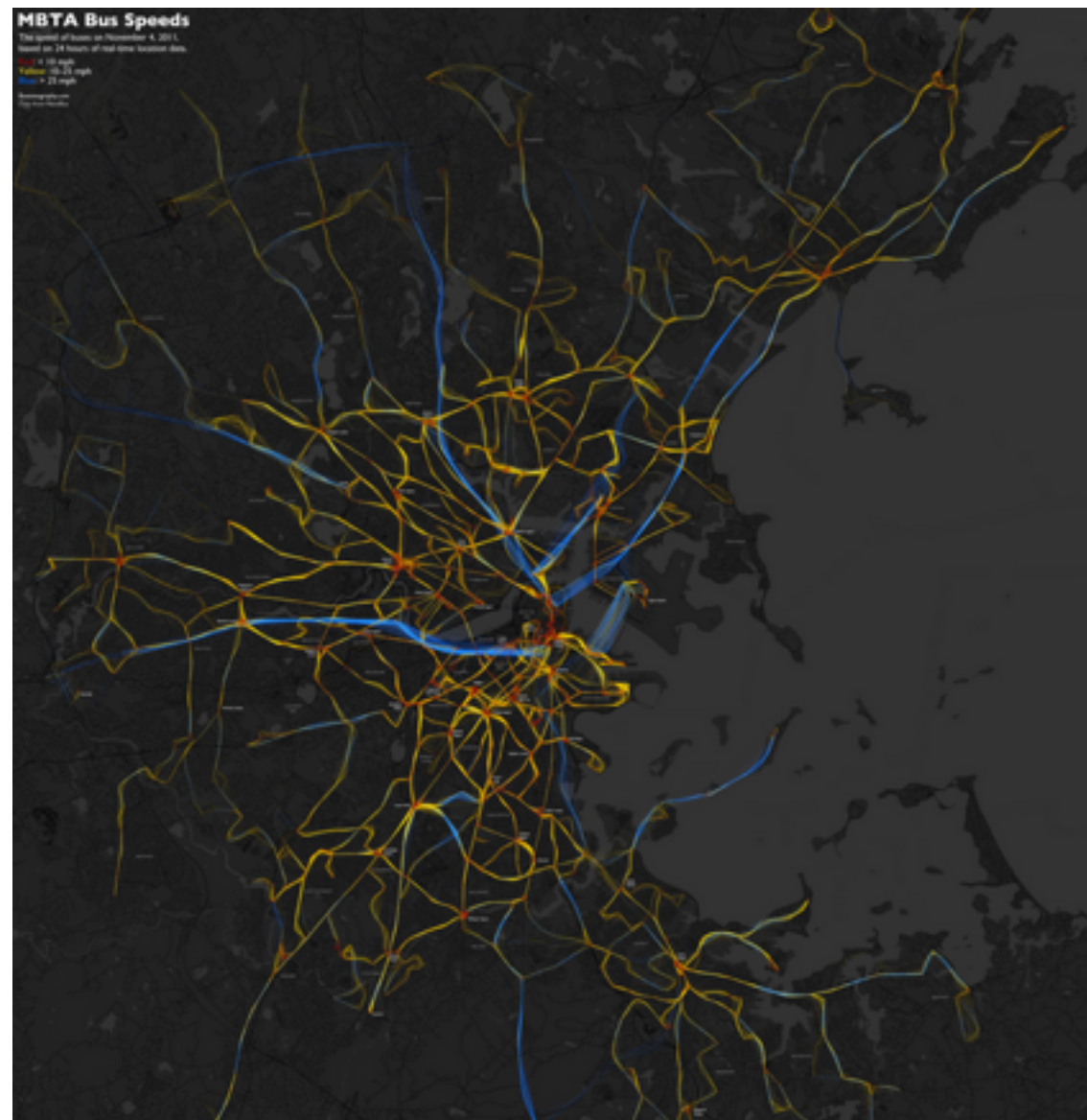
## Introducción a la Cartografía

- ▶ Conceptos
- ▶ Formatos
- ▶ Herramientas

## CartoDB

- ▶ Ejemplo: Crimen por distrito
- ▶ Ejemplo: Evolución temporal de la cultura

# Introducción a la Cartografía



<http://bostonography.com/2011/an-mbta-bus-iness-day/>

# Geometría



Polygon/Multipolygon



Points



Line/Multiline/Paths

# Sistemas de coordenadas

## WGS84 vs UTM

### Latitude and Longitude

#### Decimal Degrees

Latitude (Degrees):  Longitude (Degrees):

#### Degrees, Minutes, Seconds

Latitude Degrees:  Minutes:  Seconds:

Longitude Degrees:  Minutes:  Seconds:

### Standard UTM

#### UTM (meters)

Easting:  Northing:  Zone:  South of Equator: ☐

WHAT YOUR FAVORITE  
**MAP PROJECTION**  
 SAYS ABOUT YOU

MERCATOR



YOU'RE NOT REALLY INTO MAPS.

ROBINSON



YOU HAVE A COMFORTABLE PAIR OF RUNNING SHOES THAT YOU WEAR EVERYWHERE. YOU LIKE COFFEE AND ENJOY THE BEATLES. YOU THINK THE ROBINSON IS THE BEST-LOOKING PROJECTION, HANDS DOWN.

WINKEL-TRIPLE



NATIONAL GEOGRAPHIC ADOPTED THE WINKEL-TRIPLE IN 1998, BUT YOU'VE BEEN A WT FAN SINCE LONG BEFORE "NAT GEO" SHOWED UP. YOU'RE WORRIED IT'S GETTING PLAYED OUT, AND ARE THINKING OF SWITCHING TO THE KAVRANSKY. YOU ONCE LEFT A PARTY IN DISGUST WHEN A GUEST SHOWED UP WEARING SHOES WITH TIES. YOUR FAVORITE MUSICAL GENRE IS "POST-".

VAN DER GRINTEN



YOU'RE NOT A COMPLICATED PERSON. YOU LOVE THE MERCATOR PROJECTION; YOU JUST WISH IT WEREN'T SQUARE. THE EARTH'S NOT A SQUARE, IT'S A CIRCLE. YOU LIKE CIRCLES. TODAY IS GONNA BE A GOOD DAY!

DYMAXION



YOU LIKE ISAAC ASIMOV, XML, AND SHOES WITH TIES. YOU THINK THE SEGWAY GOT A BAD RAP. YOU OWN 3D GOGGLES, WHICH YOU USE TO VIEW ROTATING MODELS OF BETTER 3D GOGGLES. YOU TYPE IN DVDRMK.

GOODE HOMOLOGINE



THEY SAY MAPPING THE EARTH ON A 2D SURFACE IS LIKE FLATTENING AN ORANGE PEEL, WHICH SEEMS EASY ENOUGH TO YOU. YOU LIKE EASY SOLUTIONS. YOU THINK WE WOULDN'T HAVE SO MANY PROBLEMS IF WE'D JUST ELECT ~~ANYONE~~ PEOPLE TO CONGRESS INSTEAD OF POLITICIANS. YOU THINK AIRLINES SHOULD JUST BUY FOOD FROM THE RESTAURANTS NEAR THE GATES AND SERVE THAT ON BOARD. YOU CHANGE YOUR OILS, BUT SECRETLY WONDER IF YOU REALLY NEED TO.

HOB0-DYER



YOU WANT TO AVOID CULTURAL IMPERIALISM, BUT YOU'VE HEARD BAD THINGS ABOUT GAIL-PETERS. YOU'RE CONFLICT-AVERSE AND BUY ORGANIC. YOU USE A RECENTLY-INVENTED SET OF GENDER-NEUTRAL PRONOUNS AND THINK THAT WHAT THE WORLD NEEDS IS A REVOLUTION IN CONSCIOUSNESS.

A GLOBE!



YES, YOU'RE VERY CLEVER.

PEIRCE QUINCUNCIAL



YOU THINK THAT WHEN WE LOOK AT A MAP, WHAT WE REALLY SEE IS OURSELVES. AFTER YOU FIRST SAW *INCEPTION*, YOU SAT SILENT IN THE THEATER FOR SIX HOURS. IT FREAKS YOU OUT TO REALIZE THAT EVERYONE AROUND YOU HAS A SKELETON INSIDE THEM. YOU *HAVE* REALLY LOOKED AT YOUR HANDS.

PLATE CARRÉE  
 (EQUIRECTANGULAR)



YOU THINK THIS ONE IS FINE. YOU LIKE HOW X AND Y MAP TO LATITUDE AND LONGITUDE. THE OTHER PROJECTIONS OVERCOMPLICATE THINGS. YOU WANT ME TO STOP ASKING ABOUT MAPS SO YOU CAN ENJOY DINNER.

WATERMAN BUTTERFLY



REALLY? YOU KNOW THE WATERMAN? HAVE YOU SEEN THE 1909 CHILL MAP IT'S BASED ON... YOU HAVE A FRAMED REPRODUCTION AT HOME?! WHOA... LISTEN, FORGET THESE QUESTIONS. ARE YOU DOING ANYTHING TONIGHT?

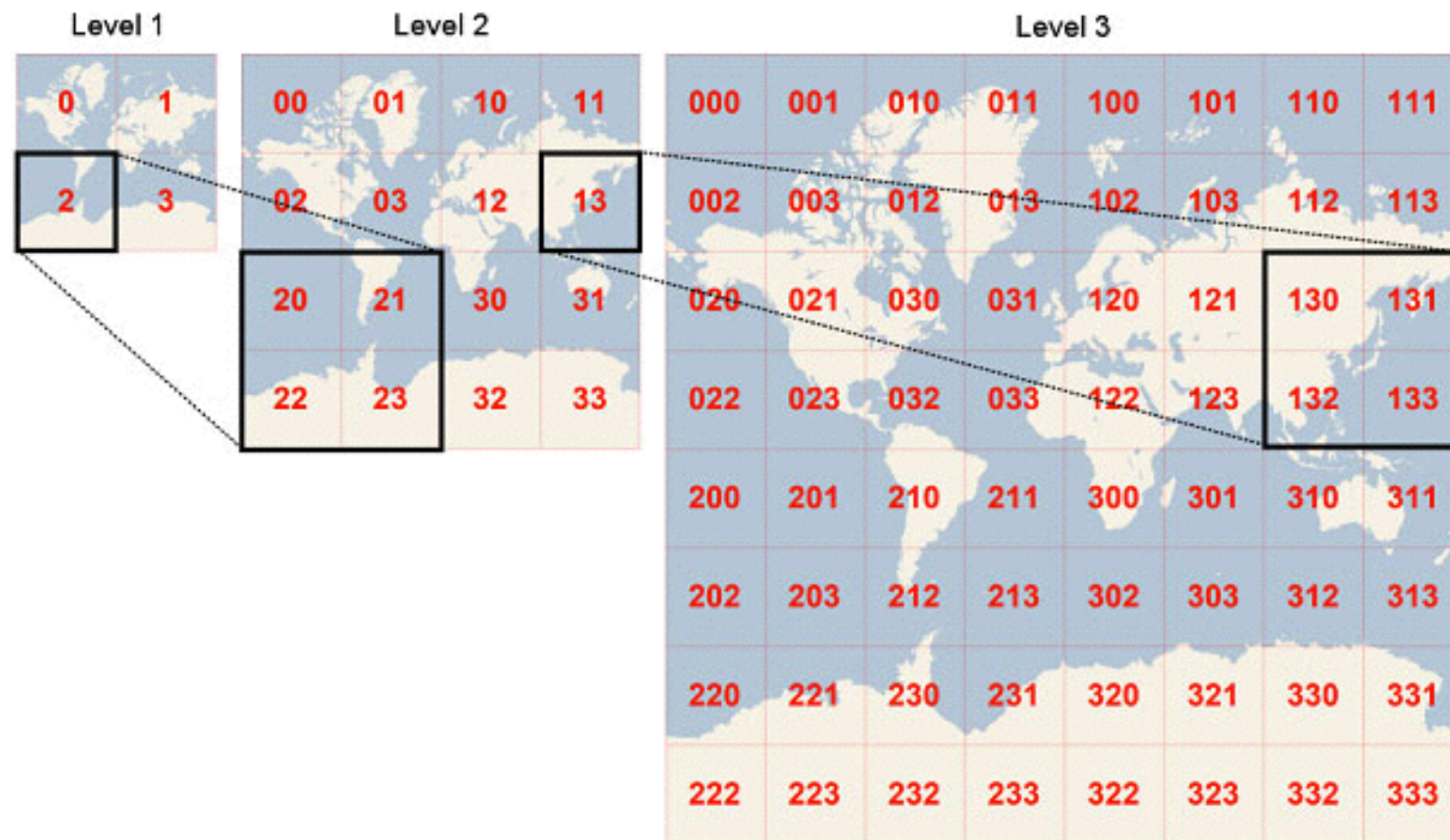
GAIL-PETERS



I *HATE* YOU.



# Tiles



# Formatos: ESRI Shapefile

- `.shp` — shape format; the feature geometry itself
- `.shx` — shape index format; a positional index of the feature geometry to allow seeking forwards and backwards quickly
- `.dbf` — attribute format; columnar attributes for each shape, in `dBase IV` format

<http://en.wikipedia.org/wiki/Shapefile>



# Formatos: GeoJSON

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "geometry": {
        "type": "Point",
        "coordinates": [102.0, 0.5]
      },
      "properties": {
        "prop0": "value0"
      }
    },
    {
      "type": "Feature",
      "geometry": {
        "type": "LineString",
        "coordinates": [
          [102.0, 0.0], [103.0, 1.0], [104.0, 0.0], [105.0, 1.0]
        ]
      },
      "properties": {
        "prop1": 0.0,
        "prop0": "value0"
      }
    }
  ],
}
```

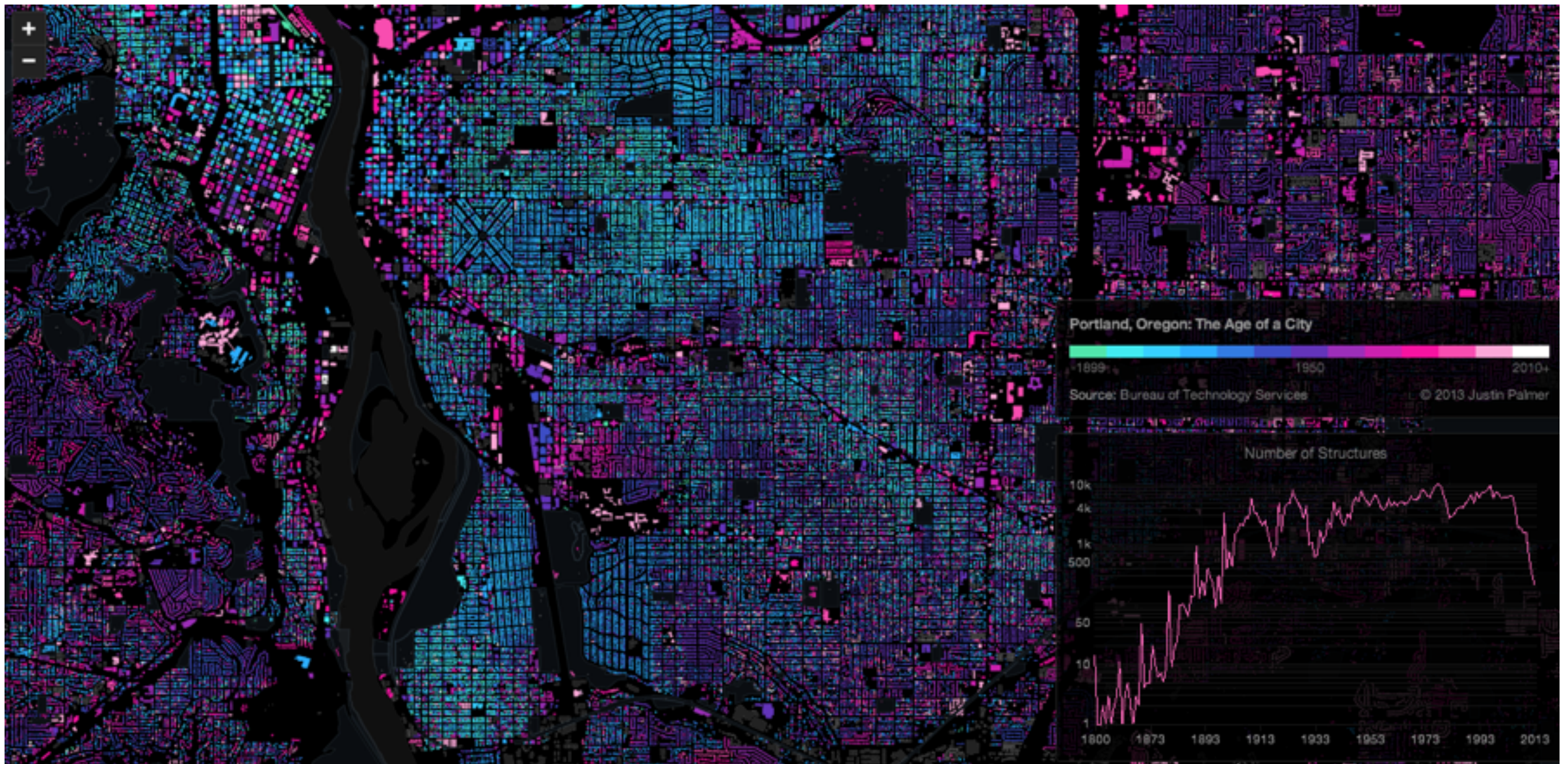
# Geocoding

- De “Carrer rocafort, 234, Barcelona” a [41.385632,2.145442]
- Manual con Google Maps
- Con Open Refine llamando al API de Google Maps
- Con Google Fusion Tables
- Con CartoDB
- Programando: <http://blog.programmableweb.com/2012/06/21/7-free-geocoding-apis-google-bing-yahoo-and-mapquest/>

<http://en.wikipedia.org/wiki/Geocoding>



# Herramientas: TileMill

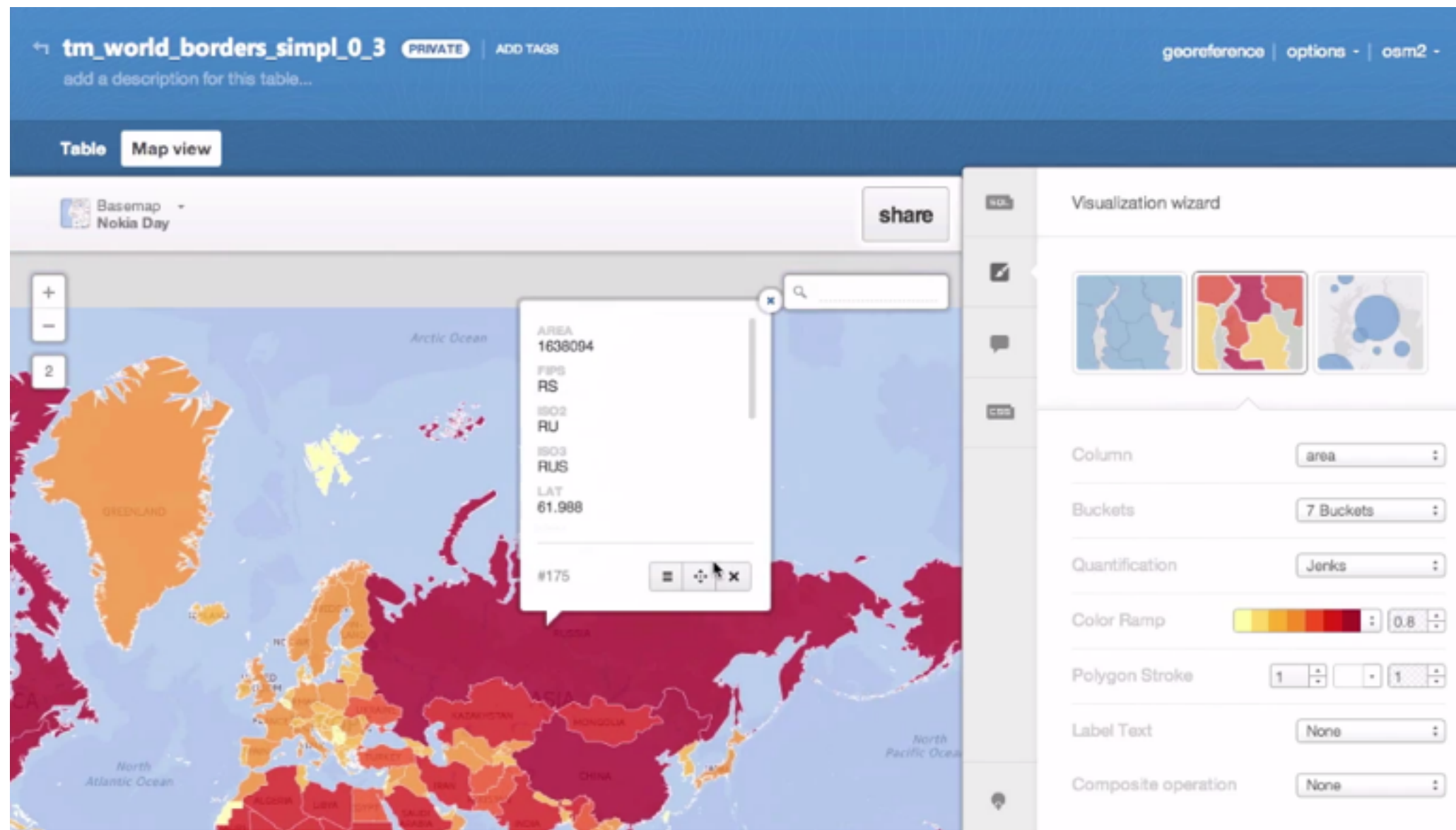


<http://labratrevenge.com/pdx>

<https://www.mapbox.com/tilemill/>



# Herramientas: CartoDB



<http://cartodb.com/>



# Herramientas: Mapbox

Mapbox

Tour

Showcase

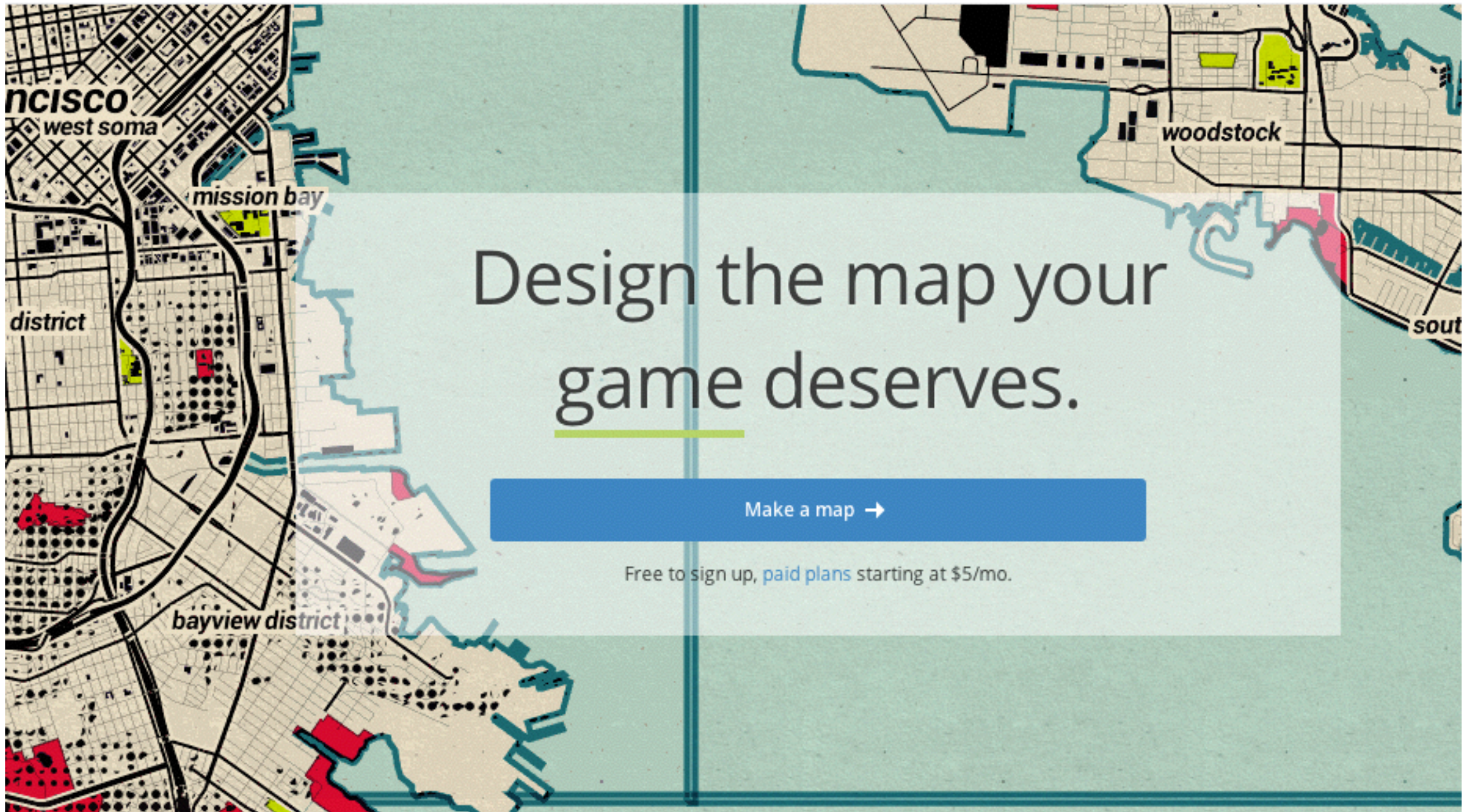
Blog

Plans

Help

Developers

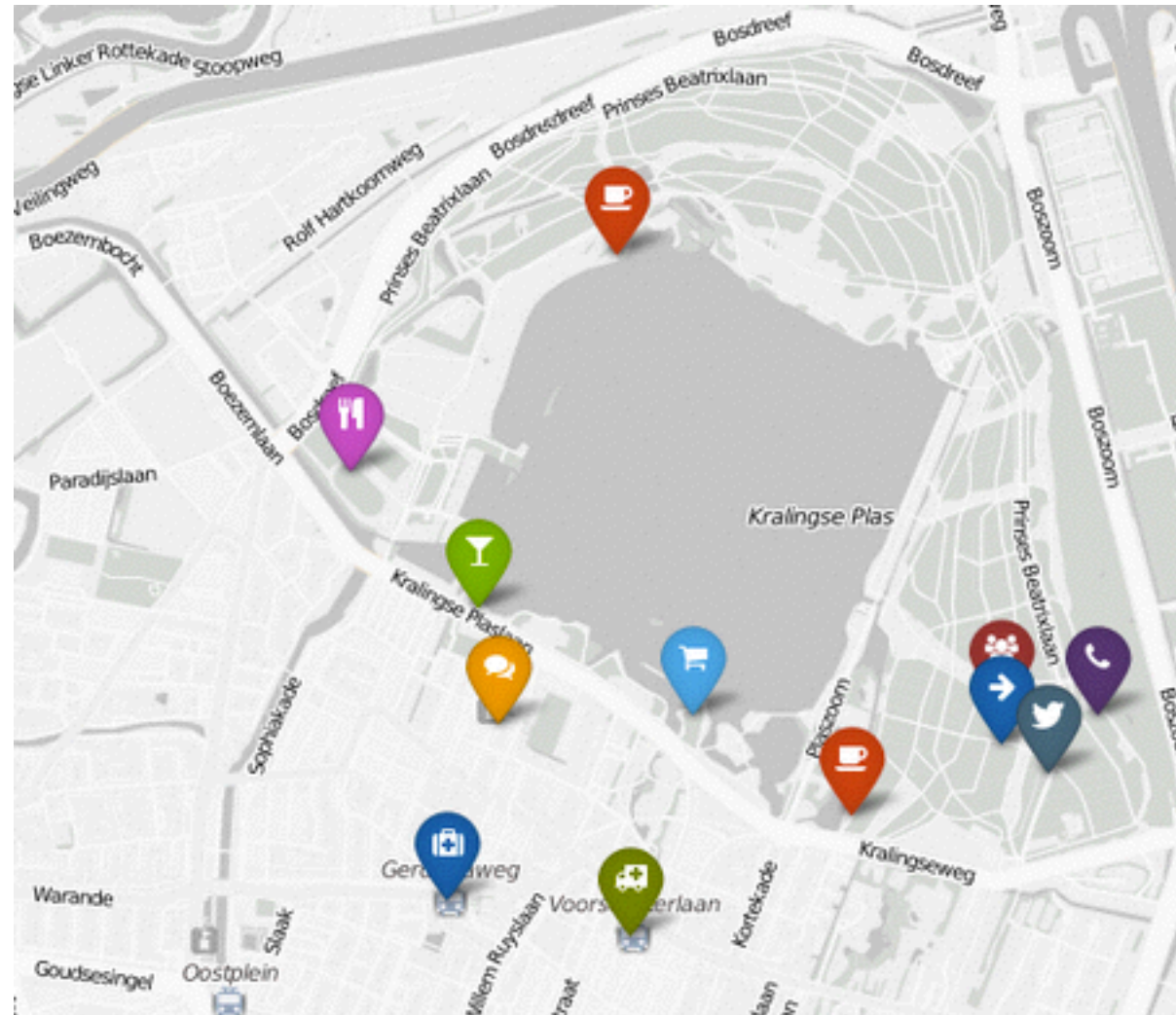
Sign



<https://www.mapbox.com/>

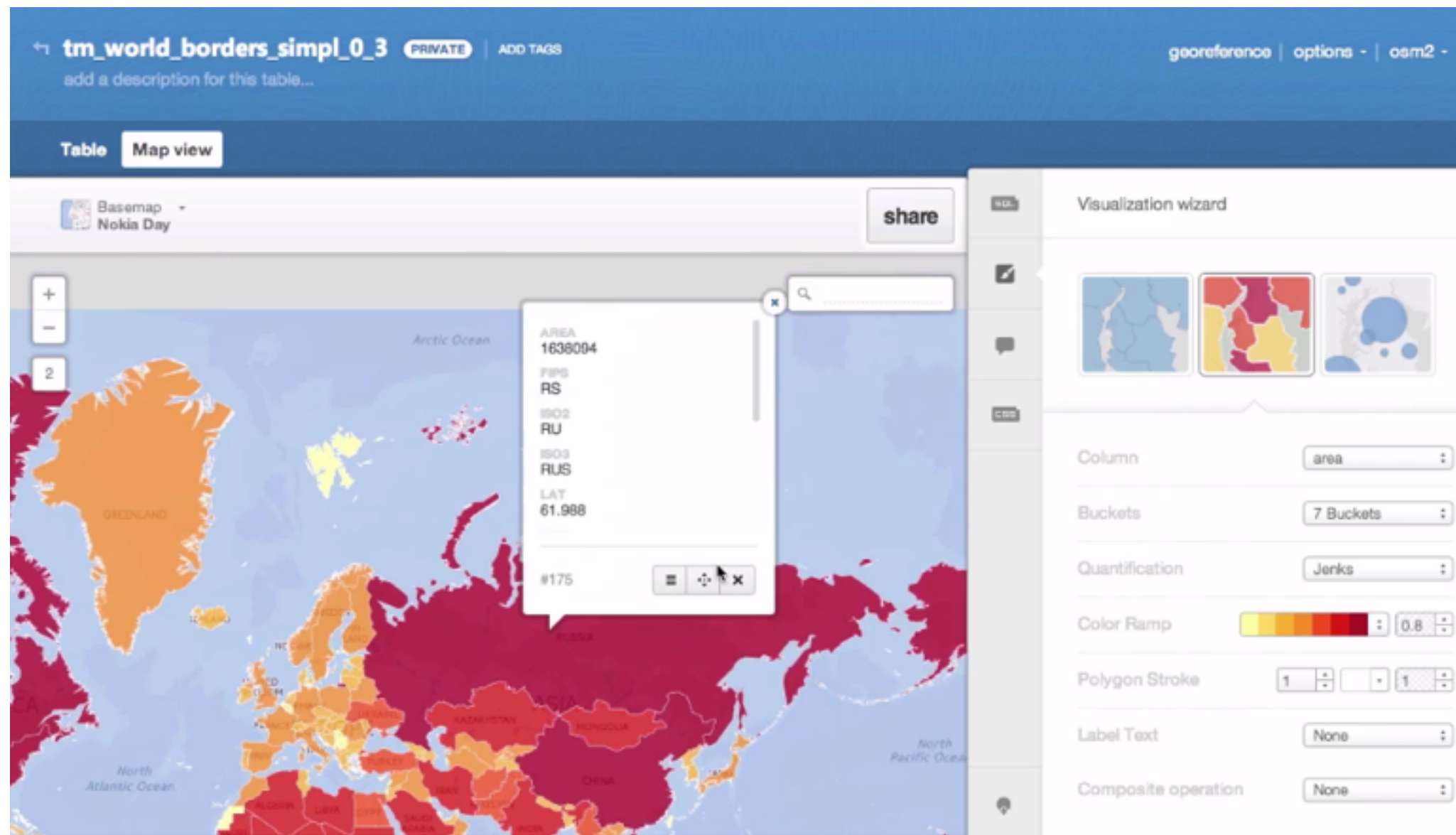


# Herramientas: Leaflet.js



<http://leafletjs.com/>

# CartoDB



<http://cartodb.com/>

# CartoDB: ejercicio guiado

- Cruzar [https://github.com/hackbdw14/hackatonData/blob/master/datasets/estadistica/seguridad/A\\_cartoDB.csv](https://github.com/hackbdw14/hackatonData/blob/master/datasets/estadistica/seguridad/A_cartoDB.csv) con <https://github.com/hackbdw14/hackatonData/blob/master/datasets/geo/distritos/distritos.json>

# CartoDB: ejercicio guiado

- Abrir <https://github.com/hackbdw14/hackatonData/blob/master/datasets/facilities/data/cultura.csv>
- Probar la categorización
- Probar el clustering y las densidades
- Filtrar por 'WIFI'
- Animar con torque y campo 'created' y probar diferentes resoluciones, blends y colores
- Exportar