

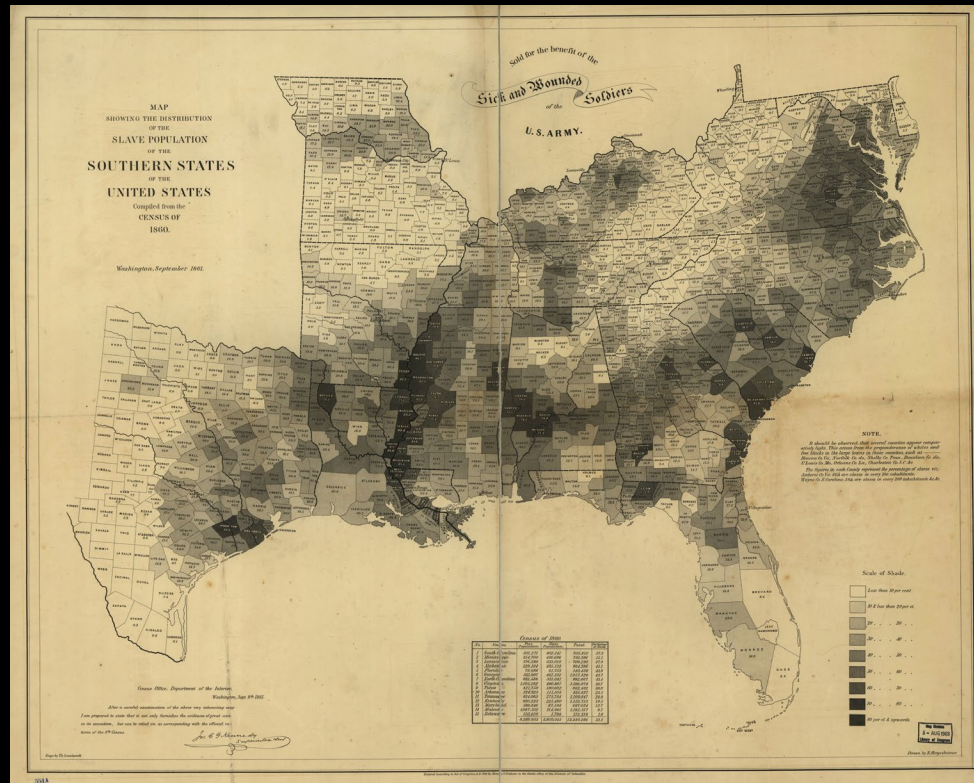
An abstract graphic on the left side of the slide. It features a dark blue background with a complex network of glowing purple and magenta lines. These lines connect various circular nodes of different sizes and colors, including purple, pink, and light blue. The overall effect is that of a data network or a spatial map visualization.

# Publishing Spatial Data

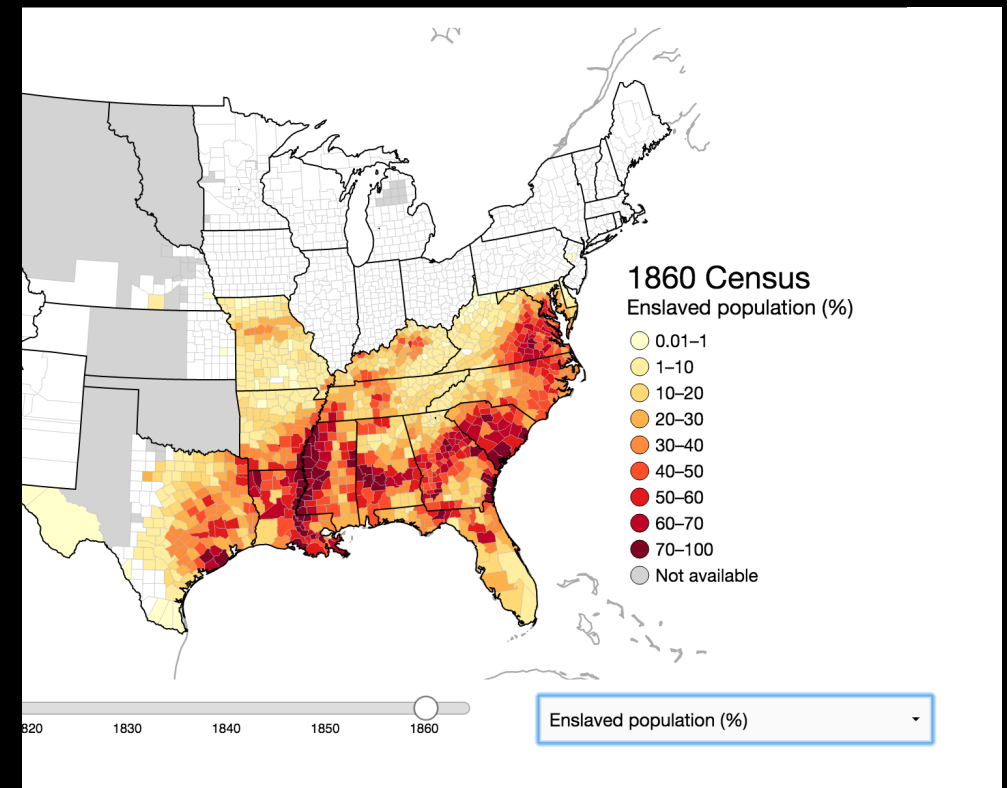
Working with Data Maps

# Data Maps

**U.S. Coast Survey, Map showing the distribution of the slave population of the southern states of the United States (Washington, DC: Henry S. Graham, 1861). Image from the Library of Congress.**



**The Spread of U.S. Slavery, 1790-1860**







# What Exactly is Visualization?

...pide impugnar la elección de ... como candidato a la Generalitat

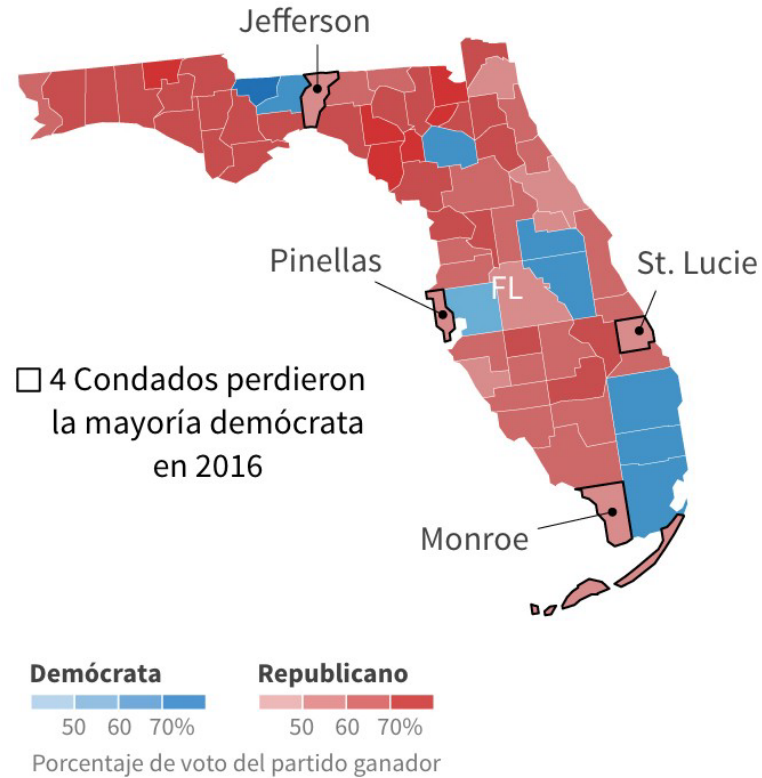


1. Zehnjährige in Brandenburg von Laster überrollt
2. Bundestag nennt AfD-Politiker Blim-Hicke, Bernd
3. Zwei neue Bahnstationen für den Berliner Süden
4. Pferdskutschen am ...

ваша email адреса ... Підприємств "Тексти": підписуйтесь на розсилку "три найкращі статті тижня"!

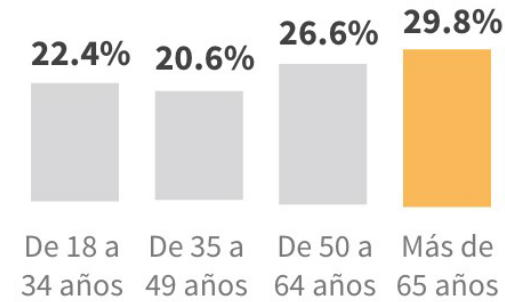
Наші інтерактивні візуалізації

Martin Schulz loses recognition in the SPD. He has excluded entry to the cabinet Merkel. Can he still become vice-chancellor?

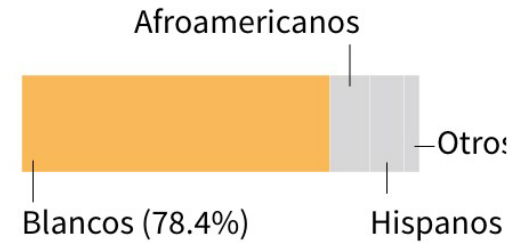


## Composición de los votantes registrados en los 58 condados donde ganó el Partido Republicano

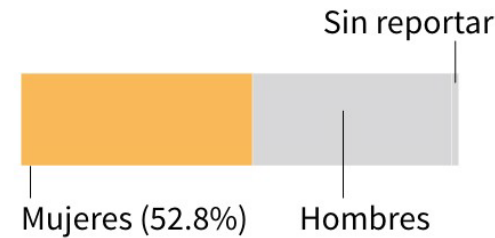
### EDAD



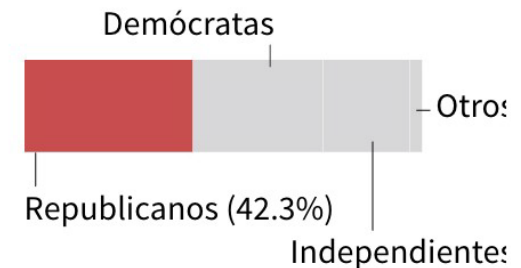
### ETNIA



### GÉNERO



### REGISTRO POLÍTICO



<https://www.univision.com/noticias/elecciones-2016/los-hispanos-no-fallaron-en-florida-fueron-los-blancos-quienes-sorprendieron-y-marcaron-el-inicio-de-la-victoria-de-trump>





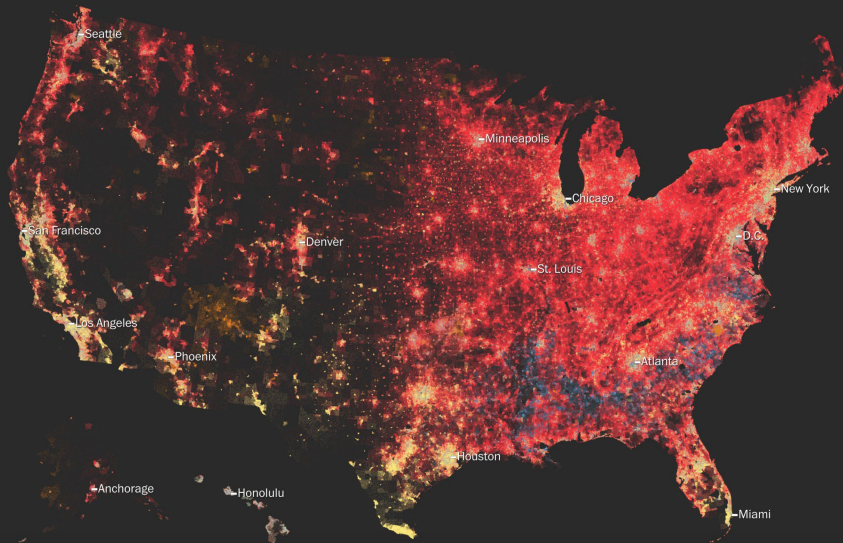
National • Analysis

## America is more diverse than ever — but still segregated

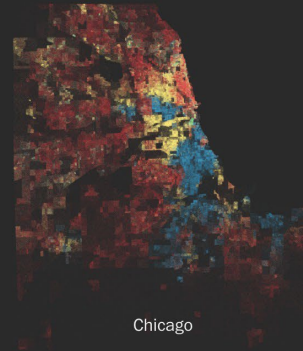
The United States is on track to be a majority-minority nation by 2044. But census data show most of our neighbors are the same race.

By Aaron Williams and Armand Emamdjomeh May 2, 2018

● Black ● White ● Hispanic  
● Asian/Pacific Islander ● Native American ● Multi-race and other



● Black ● White ● Hispanic  
● Asian/Pacific Islander ● Native American ● Multi-race and other



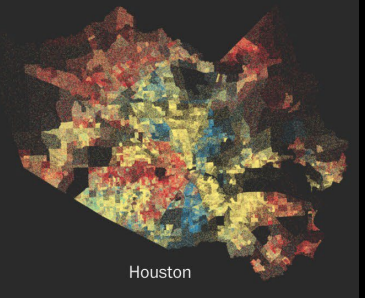
Chicago

Legacy segregation



Washington, D.C.

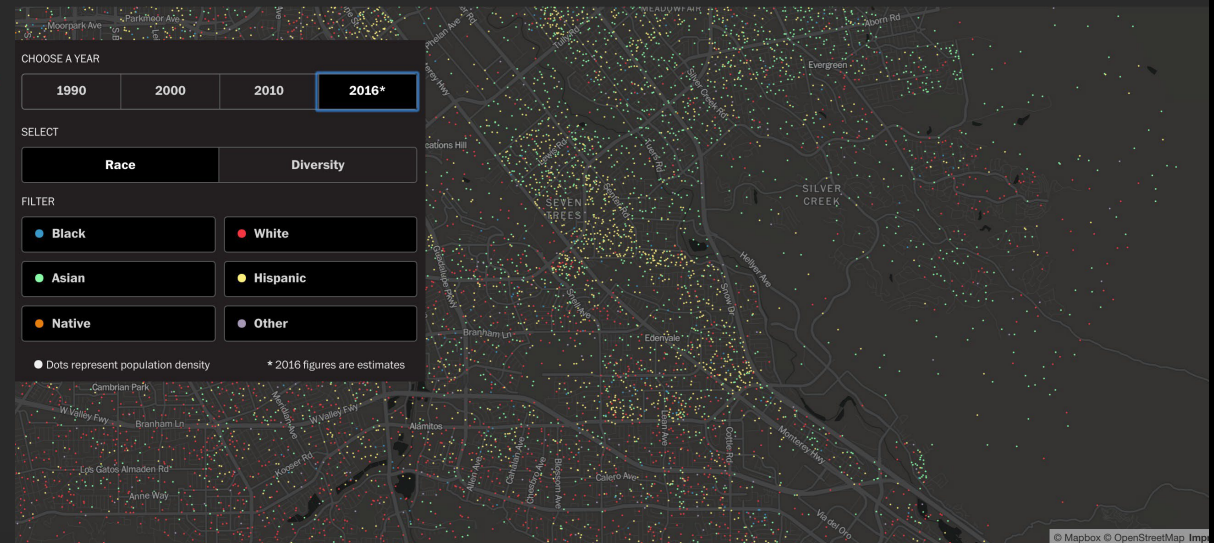
Diverse suburbs



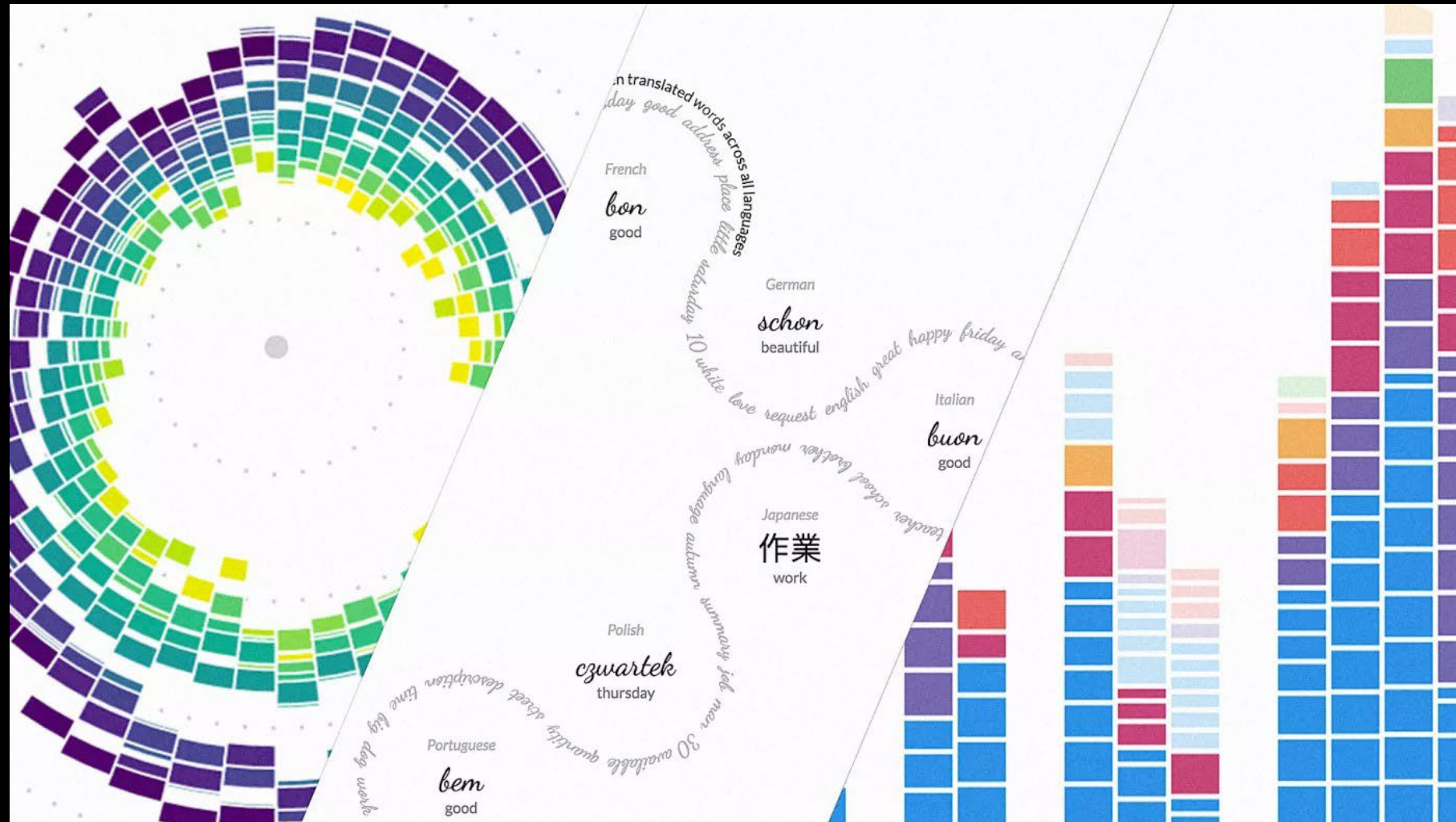
Houston

Rapidly integrated

San Jose, California, United States



# Google News Lab:



<https://www.fastcodesign.com/9011367/what-happens-when-google-turns-artists-loose-on-its-search-data>

**SEE ALL PROJECTS:**

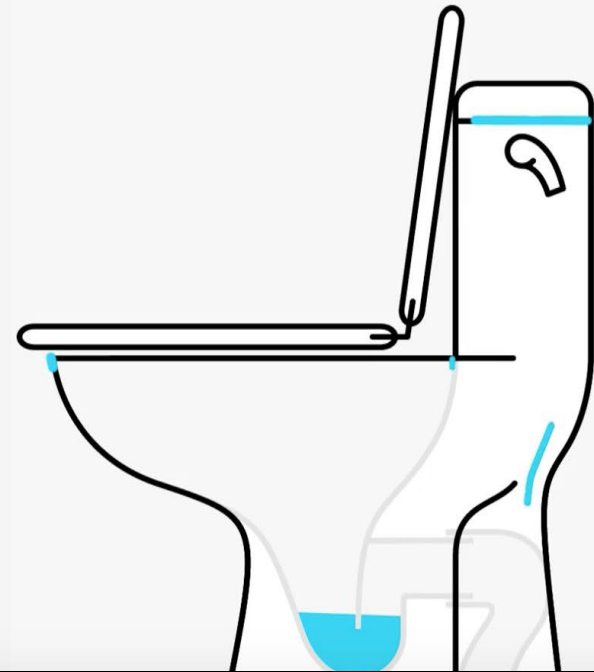
[https://trends.google.com/trends/story/US\\_cu\\_6fXtAFIBAABWdM\\_en](https://trends.google.com/trends/story/US_cu_6fXtAFIBAABWdM_en)



# How To Fix a Toilet

And Other Things  
We Couldn't Do Without  
Search

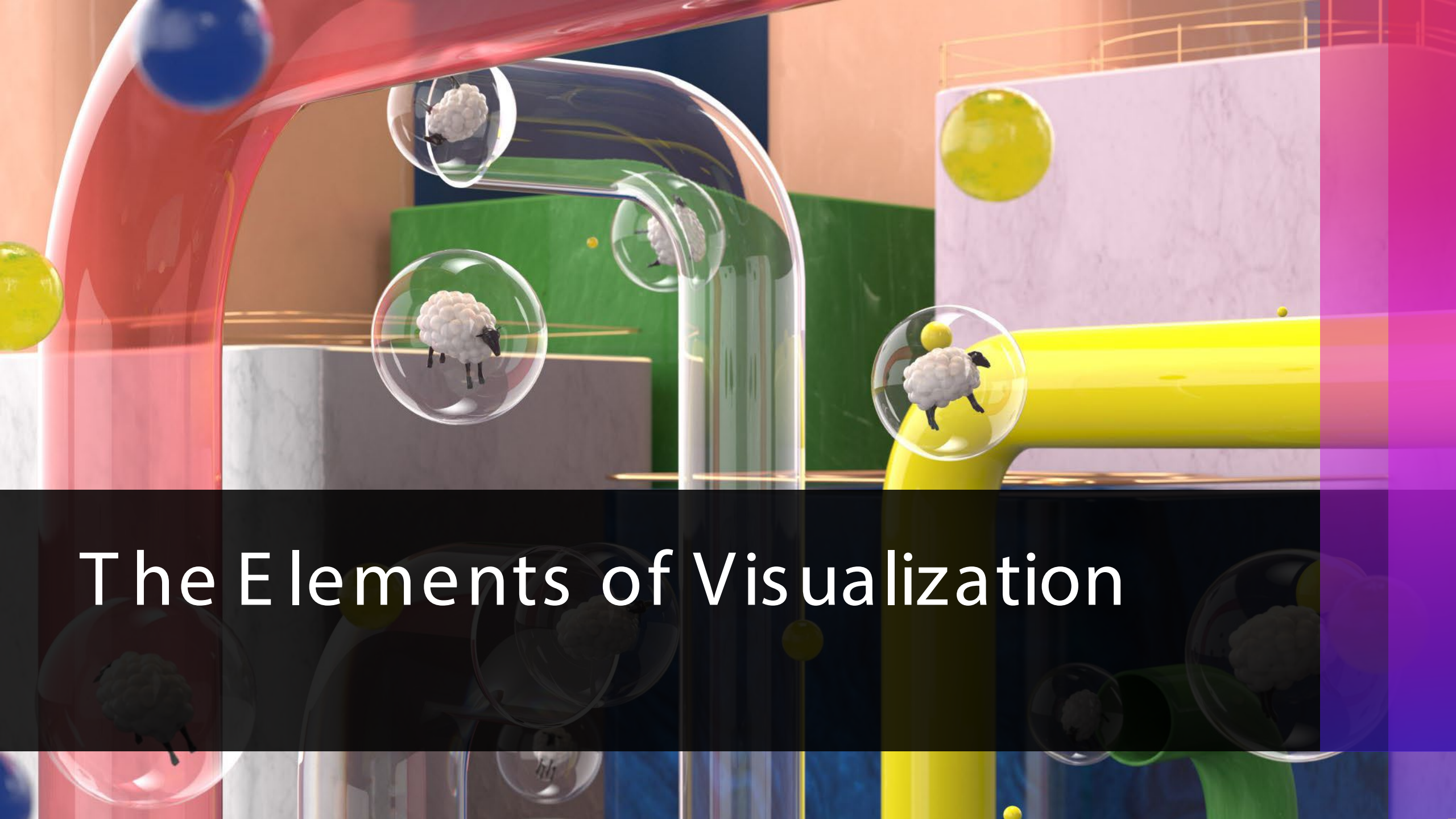
A collaboration with **Google News Lab**  
A visual essay by **Xaquín G.V.**



<http://how-to-fix-a-toilet.com/>

It looks like magic  
but it isn't...





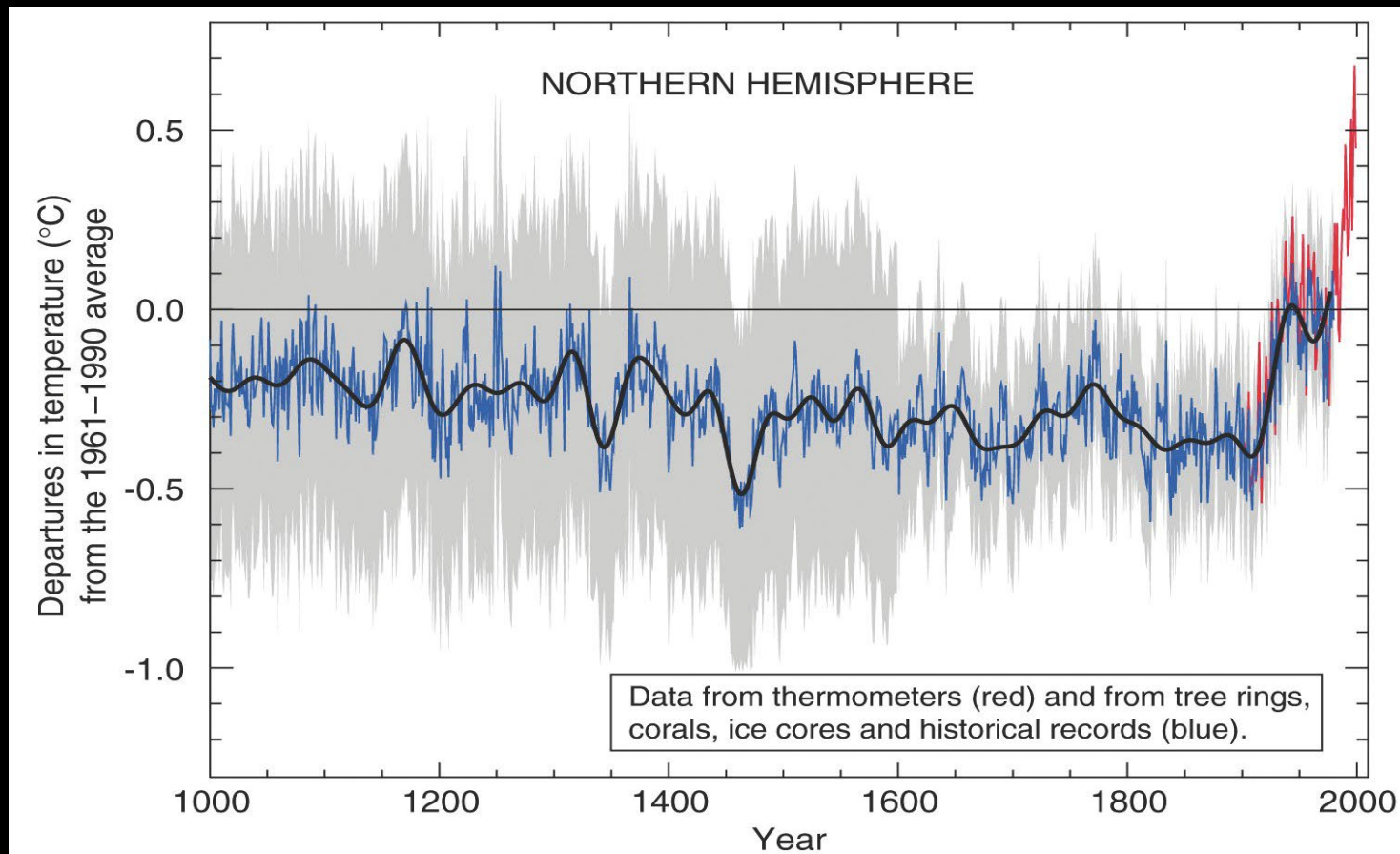
# The Elements of Visualization

1	YEAR	TEMP	YEAR	1 SIGMA	2 SIGMA		
2	1000	0.0659	1000	0.240346	0.480693	0.206137	0.123588
3	1001	-0.1241	1001	0			
4	1002	-0.1208	1002	0			
5	1003	-0.1801	1003	0			
6	1004	-0.0711	1004	0			
7	1005	-0.1334	1005	0			
8	1006	-0.0644	1006	0			
9	1007	0.0042	1007	0			

10	1008	-0.1288	1008	0			
11	1009	-0.0296	1009	0			
12	1010	0.1187	1010	0			
13	1011	-0.1252	1011	0			
14	1012	-0.1634	1012	0			
15	1013	-0.0791	1013	0			
16	1014	-0.1120	1014	0			
17	1015	-0.1146	1015	0			
18	1016	-0.1206	1016	0			
19	1017	-0.0815	1017	0			
20	1018	-0.2031	1018	0			
21	1019	0.0305	1019	0			
22	1020	0.1098	1020	0			
23	1021	0.0244	1021	0			
24	1022	-0.0743	1022	0			
25	1023	-0.0323	1023	0			
26	1024	-0.0434	1024	0			

	A	B	C	D	E	F	G	H
878	1876	-0.1891	1876	0.113228	0.226456	8.25297E-02	7.75207E-02	
879	1877	-0.0140	1877	0.113228	0.226457	8.25299E-02	7.75209E-02	
880	1878	-0.0873	1878	0.113228	0.226457	8.25298E-02	7.75209E-02	
881	1879	-0.2959	1879	0.113229	0.226458	8.25302E-02	7.75212E-02	
882	1880	-0.2368	1880	0.113229	0.226457	8.25300E-02	7.75210E-02	
883	1881	-0.1977	1881	0.113229	0.226458	8.25302E-02	7.75212E-02	
884	1882	-0.2036	1882	0.113229	0.226457	8.25300E-02	7.75210E-02	
885	1883	-0.2489	1883	0.113228	0.226455	8.25293E-02	7.75204E-02	
886	1884	-0.2125	1884	0.113229	0.226457	8.25301E-02	7.75211E-02	
887	1885	-0.1896	1885	0.113228	0.226457	8.25299E-02	7.75210E-02	
888	1886	-0.1084	1886	0.113228	0.226456	8.25298E-02	7.75208E-02	
889	1887	-0.3265	1887	0.113228	0.226456	8.25296E-02	7.75206E-02	
890	1888	-0.1694	1888	0.113228	0.226457	8.25298E-02	7.75209E-02	
891	1889	-0.1339	1889	0.113228	0.226456	8.25298E-02	7.75208E-02	
892	1890	-0.3107	1890	0.113229	0.226457	8.25301E-02	7.75211E-02	
893	1891	-0.1754	1891	0.113229	0.226457	8.25300E-02	7.75210E-02	
894	1892	-0.3186	1892	0.113228	0.226456	8.25295E-02	7.75205E-02	
895	1893	-0.3236	1893	0.113228	0.226456	8.25297E-02	7.75207E-02	
896	1894	-0.1970	1894	0.113228	0.226456	8.25295E-02	7.75205E-02	
897	1895	-0.1578	1895	0.113228	0.226456	8.25297E-02	7.75207E-02	
898	1896	-0.0804	1896	0.113228	0.226456	8.25298E-02	7.75208E-02	
899	1897	-0.0537	1897	0.113228	0.226456	8.25298E-02	7.75208E-02	
900	1898	-0.2195	1898	0.113229	0.226457	8.25301E-02	7.75211E-02	
901	1899	-0.3486	1899	0.113228	0.226456	8.25297E-02	7.75207E-02	
902	1900	-0.1253	1900	0.113229	0.226457	8.25300E-02	7.75210E-02	
903	1901	-0.1575	1901	0.113228	0.226456	8.25296E-02	7.75206E-02	





- Michael E. Mann, Raymond S. Bradley, and Malcolm K. Hughes  
Intergovernmental Panel on Climate Change (IPCC), Third Report, 2001

# Optional: Exploring Data

- We will use a data set from [Matthew Lincoln's](#) research on Dutch art. His dataset on works of art that depict places in Amsterdam can be downloaded from the [resources](#) page. You should begin by looking at the [repository in which his data is stored](#), and by reading the [associated blog post](#) where he talks about his research questions.
- Examining the data
  - Begin by answering these questions:
    - Where did he get his data?
    - How did he gather it?
    - What research questions did he have?
    - How did these questions shape the data?
- Now download and open the data sets. Notice that there are three files in [comma-separated values](#) (CSV) format. These can be opened in a spreadsheet program like Libre Office or Excel. Try to answer these questions.
  - What information do these files hold?
  - Where is the spatial data? What kind of spatial data is there?
  - What is the relationship between the files?



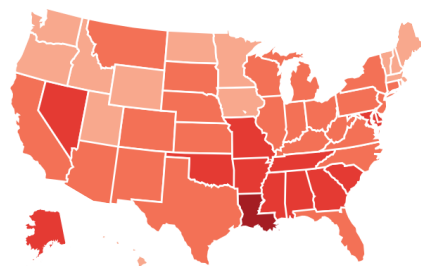
**A FRAMEWORK  
+  
VISUAL ENCODINGS  
+ ANNOTATIONS**



## COMPLETE CHART

### MURDERS

Rate per 100,000 people (2015)

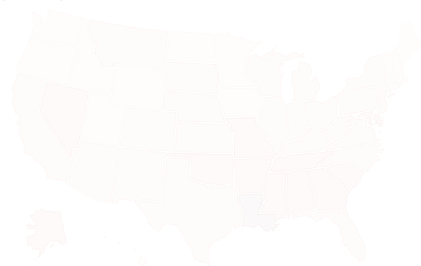


Source: FBI Uniform Crime Reports

## FRAMEWORK

### MURDERS

Rate per 100,000 people (2015)

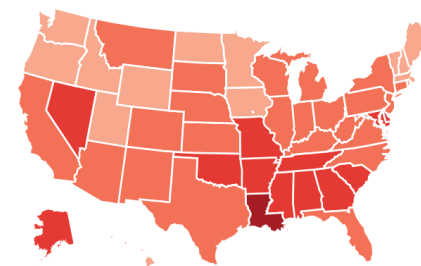


Source: FBI Uniform Crime Reports

## CONTENT (ENCODING)

### MURDERS

Rate per 100,000 people (2015)

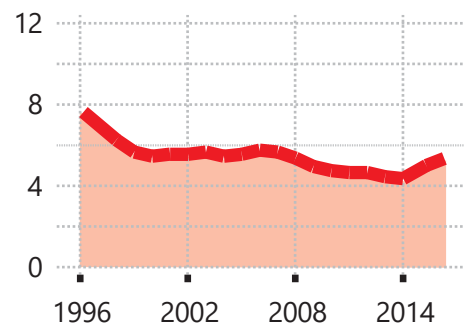


Source: FBI Uniform Crime Reports

## COMPLETE CHART

### MURDERS

Rate per 100,000 people

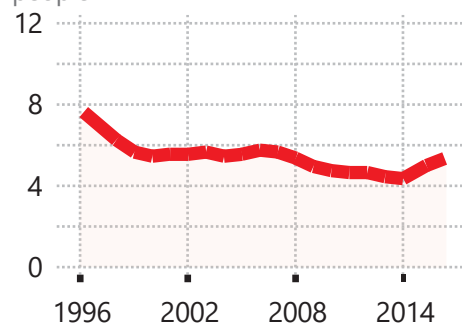


Source: FBI Uniform Crime Reports

## FRAMEWORK

### MURDERS

Rate per 100,000 people

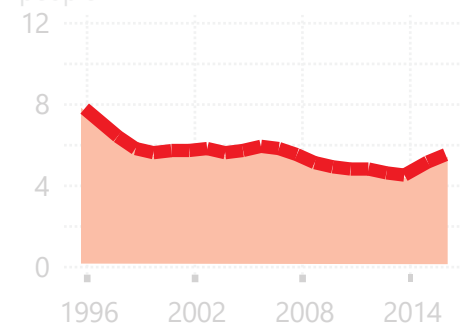


Source: FBI Uniform Crime Reports

## CONTENT (ENCODING)

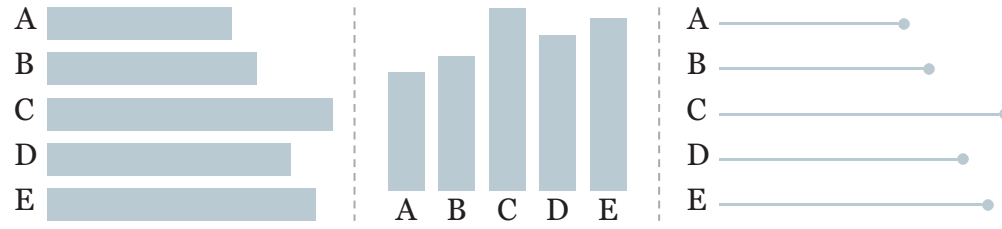
### MURDERS

Rate per 100,000 people

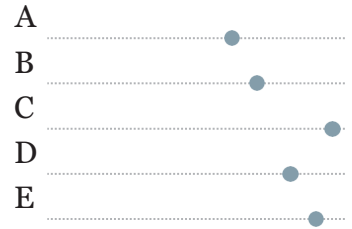


Source: FBI Uniform Crime Reports

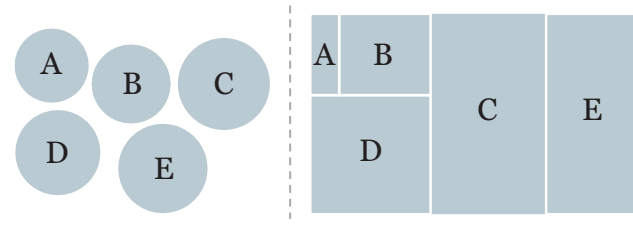
### *Length or height*



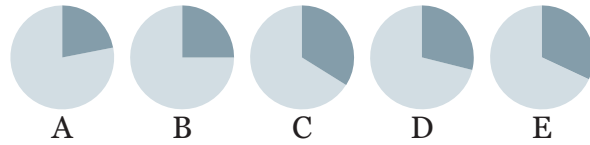
### *Position*



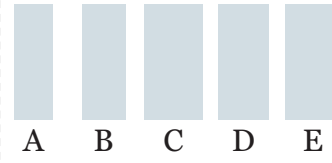
### *Area*



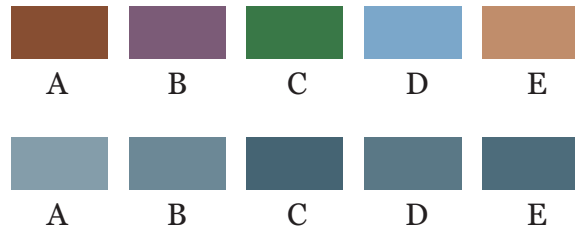
### *Angle/area*



### *Line weight*



### *Hue and shade*



# Visual encoding

Figures represented  
in all these graphics:  
22%, 25%, 34%, 29%, 32%



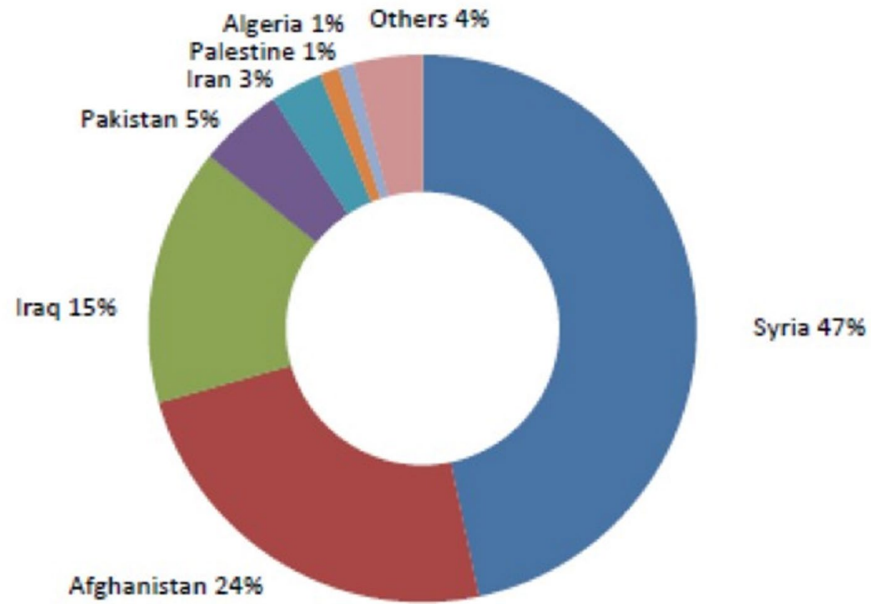
# Identifying Encodings

THE STYLE AND STRUCTURE OF A VISUALIZATION  
DEPEND ON ITS PURPOSE



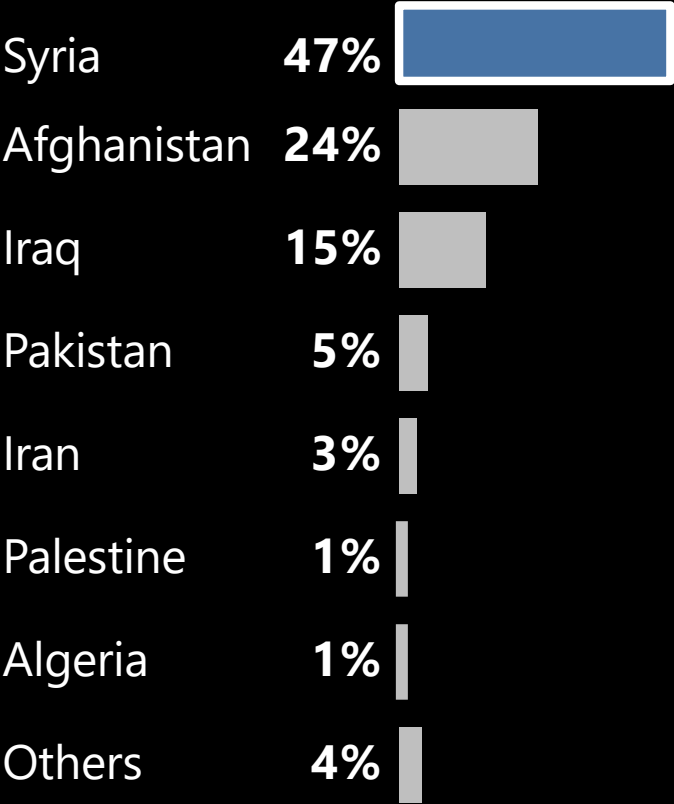
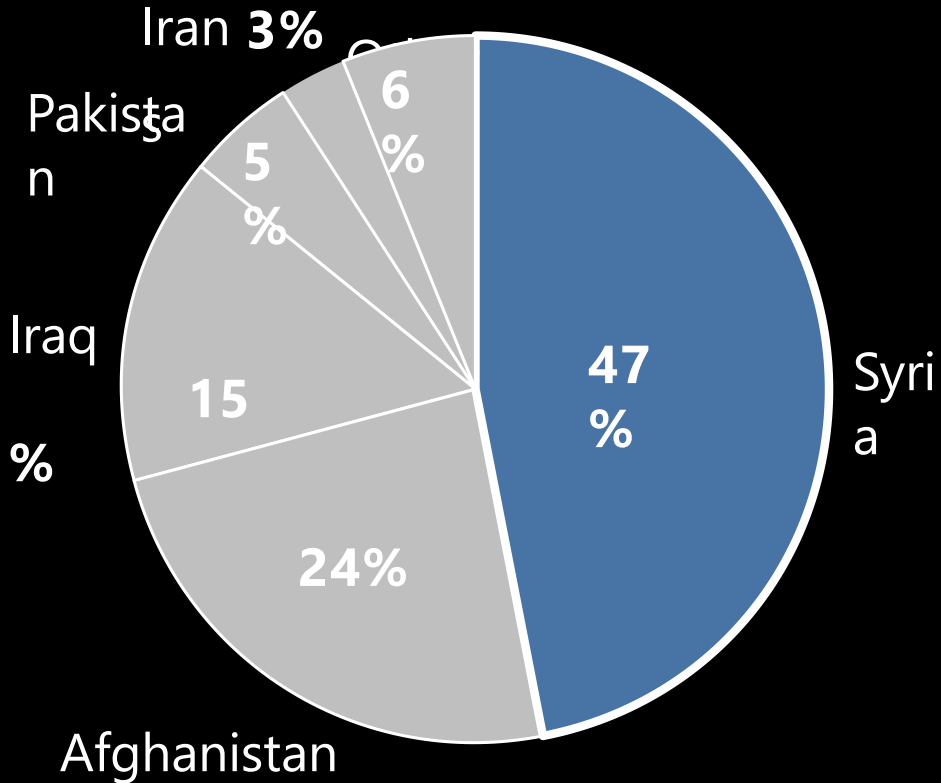
Figure 2 - Main nationalities of arriving migrants – 2016

Greece

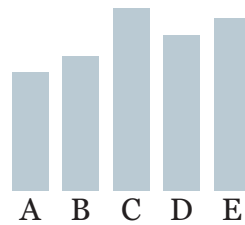


European  
Commission

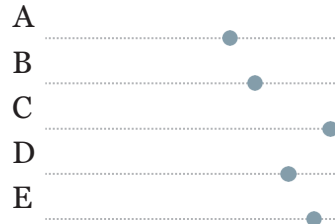
# EUROPEAN COMMISSION



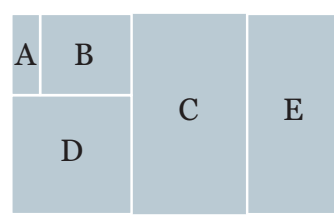
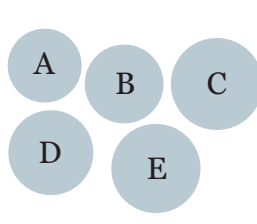
### *Length or height*



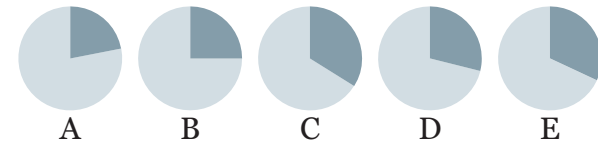
### *Position*



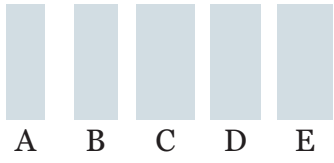
### *Area*



### *Angle/area*



### *Line weight*



### *Hue and shade*



Figures represented  
in all these graphics:  
22%, 25%, 34%, 29%, 32%

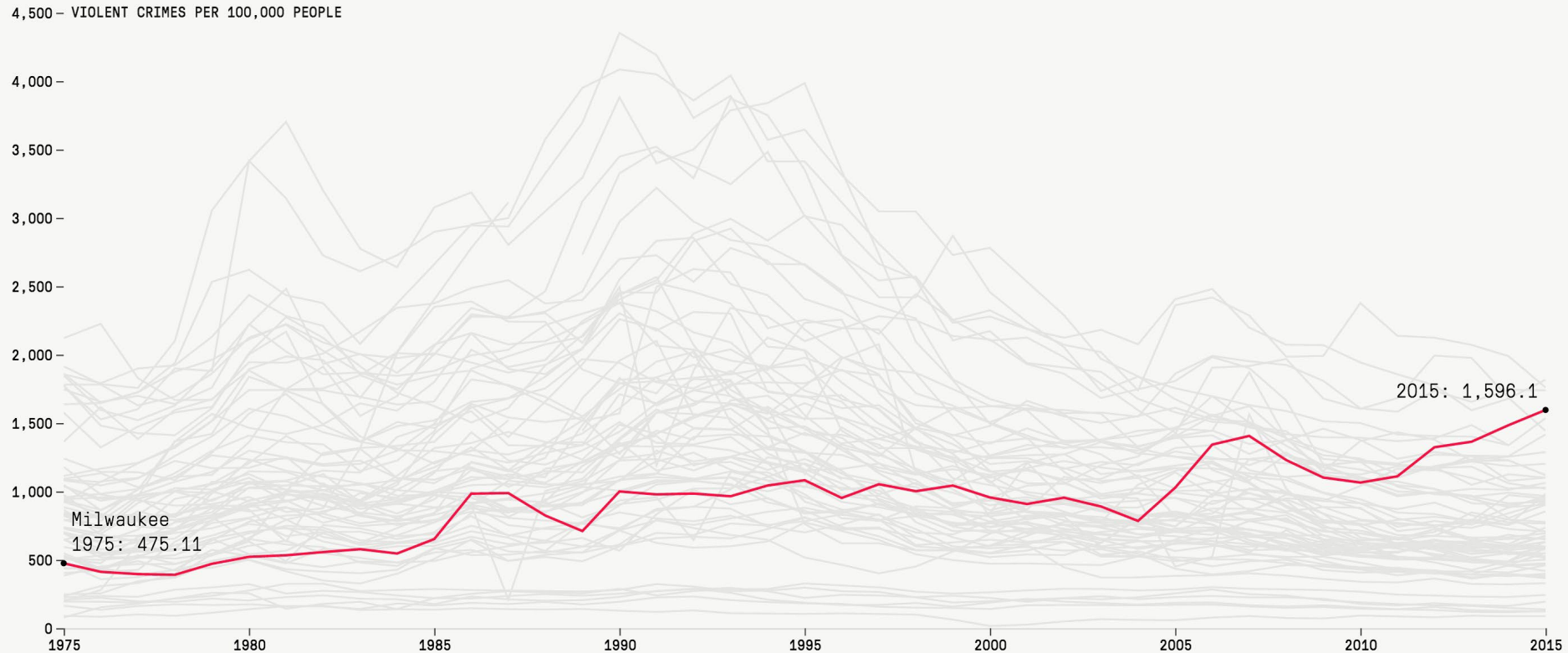
# Visual encoding



# What methods of encoding can you spot here?

The **rate** of **violent crime** was up **236%** in **Milwaukee** between **1975** and 2015.

MILWAUKEE'S VIOLENT CLIMB THE NEW YORK CITY DROP BALTIMORE'S SPIKE RANDOM



<https://www.themarshallproject.org/2016/08/18/crime-in-context#.Q2NYkV3mN>

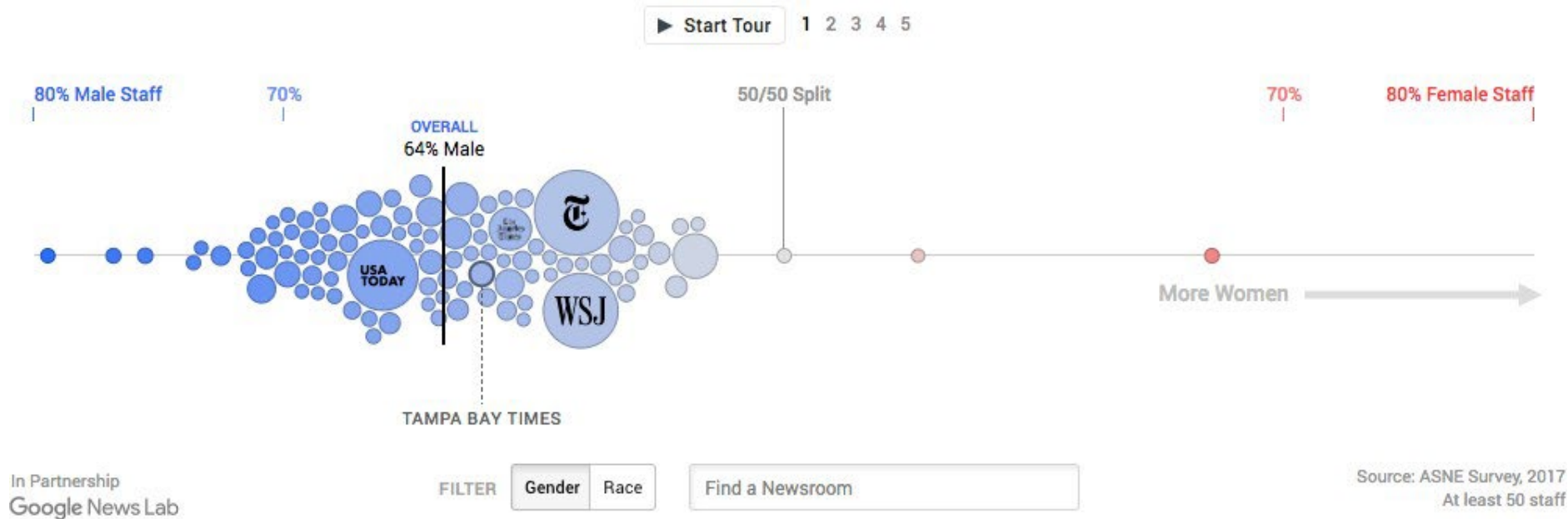
The Marshall Project

# What methods of encoding can you spot here?

AMERICAN SOCIETY of NEWS EDITORS

## The Diversity of US Newsrooms

The Newsroom Employment Diversity Survey measures the percentage of women and minorities working in newsrooms nationwide.



<https://polygraph-cool.github.io/asne/dev/>

Polygraph for Google News Lab

What methods of encoding can you spot here?

[NPR.org](http://www.npr.org)

[http://www.npr.org/sections/\\_health-shots/2017/04/14/522956939/maps-show-a-dramatic-rise-health-in-insurance-coverage-under-aca](http://www.npr.org/sections/_health-shots/2017/04/14/522956939/maps-show-a-dramatic-rise-health-in-insurance-coverage-under-aca)

POLICY-ISH

## Maps Show A Dramatic Rise In Health Insurance Coverage Under ACA

April 14, 2017 · 9:37 AM ET

ALYSON HURT



JUAN ELOSUA

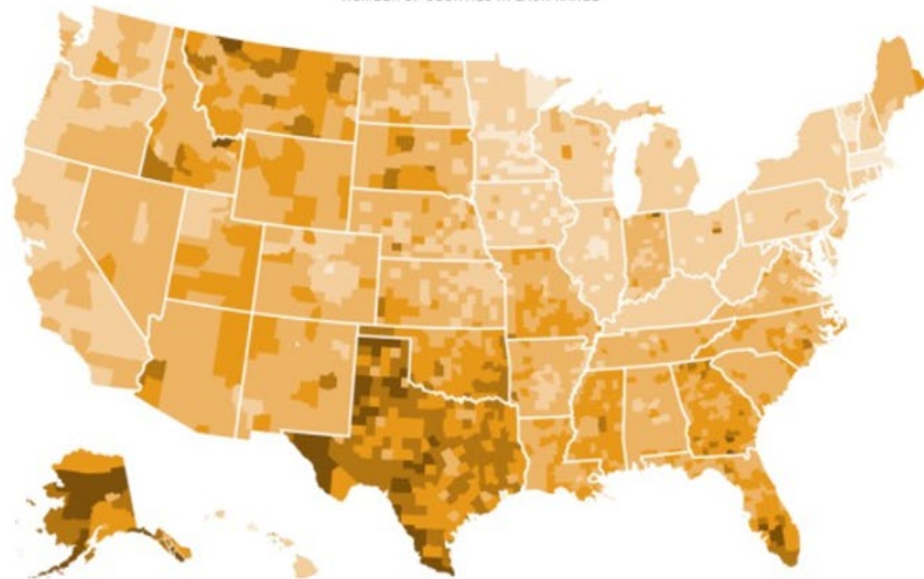
REBECCA HERSHER



SHARE OF PEOPLE UNDER 65 WITHOUT INSURANCE



NUMBER OF COUNTIES IN EACH RANGE



Source: NPR analysis of Census Bureau data





# The Core Principles

## Good visualizations

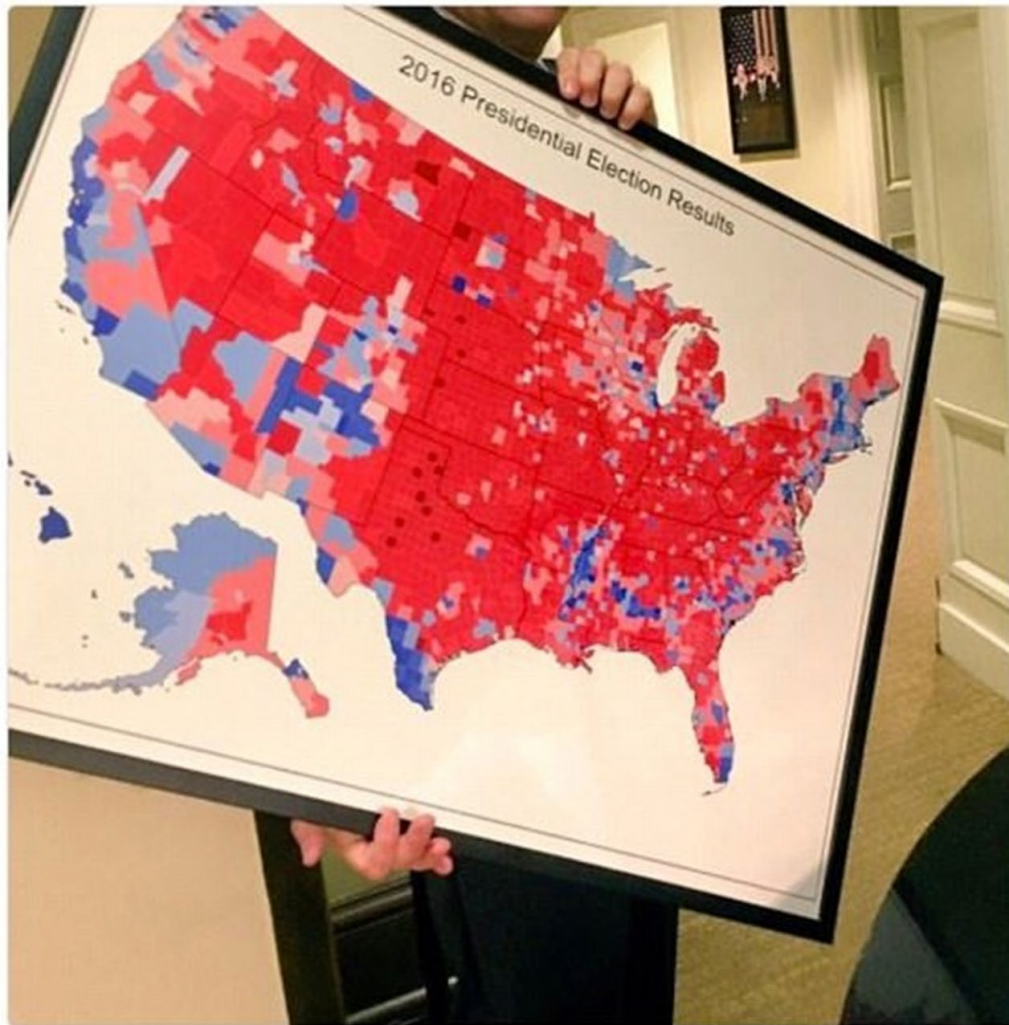
1. ...Are based on good data
2. ...Attract your attention
3. ...Represent the data accurately
4. ...Show the right amount of data





**Trey Yingst** @TreyYingst · May 11

Spotted: A map to be hung somewhere in the West Wing



[https://twitter.com/TreyYingst?ref\\_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor](https://twitter.com/TreyYingst?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor)



**Gideon Resnick**  @GideonResnick · 32m

here's a pic from reuters of Trump with the electoral maps he showed to reporters yesterday





**Donald J. Trump** @realDonaldTrump · Feb 27  
I want to encourage all of my many Texas friends to vote in the primary for Governor Greg Abbott, Senator Ted Cruz, Lt. Gov. Dan Patrick, and Attorney General Ken Paxton. They are helping me to Make America Great Again! Vote early or on March 6th.

20K 27K 99K

**Trevor** @trevorHartje · Feb 27  
You have no friends

553 223 4.9K

**Nancy Steffan** @steffan\_nancy [Follow](#)

Replying to @trevorHartje @realDonaldTrump

Really?



**Donald J. Trump** @realDonaldTrump · Feb 27  
Such a beautiful map, thank you!

**Nancy Steffan** @steffan\_nancy  
Replying to @trevorHartje @realDonaldTrump  
Really?

13K 16K 65K

**WRONG**

**CITIZENS<sup>FOR</sup>  
TRUMP**



THE INSIDE STORY  
OF THE PEOPLE'S MOVEMENT  
TO TAKE BACK AMERICA



**JACK POSOBIEC**

**RIGHT**

**COUNTIES<sup>FOR</sup>  
TRUMP**



THE INSIDE STORY  
OF 46% OF VOTERS' MOVEMENT  
TO TAKE BACK AMERICA

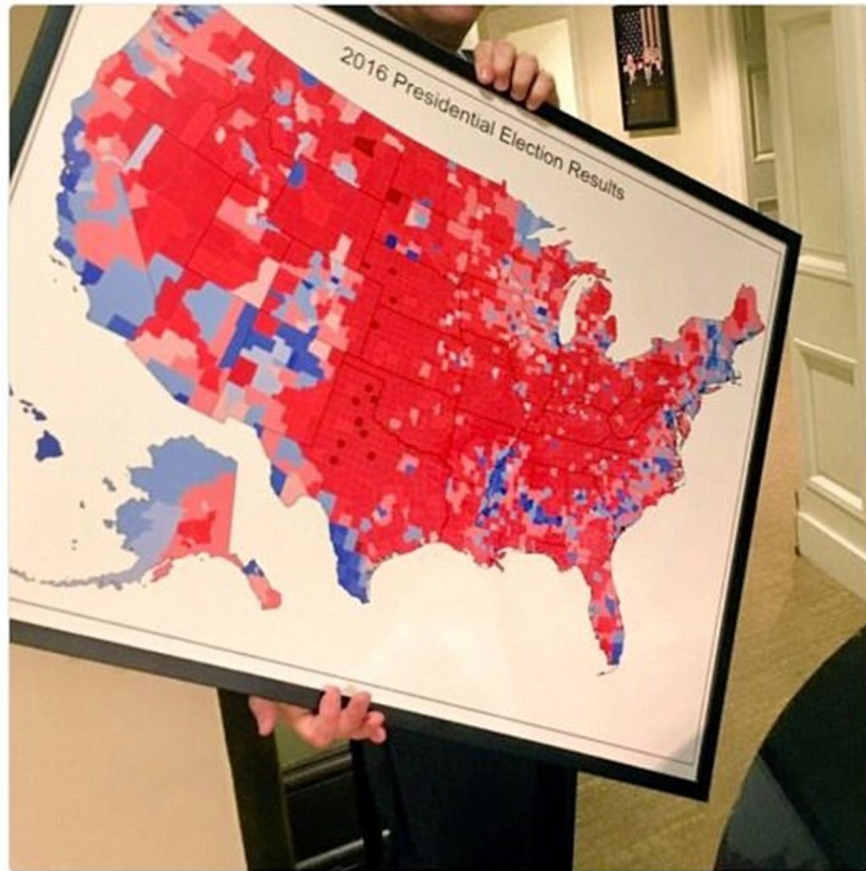


**JACK POSOBIEC**



Trey Yingst @TreyYingst · May 11

Spotted: A map to be hung somewhere in the West Wing



Surface on the  
county-level  
map:

Red: 80%

Blue: 20%

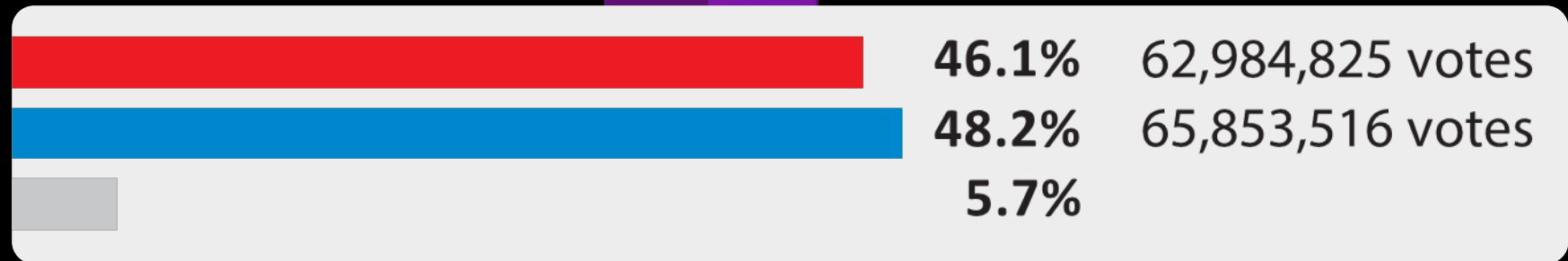


Surface on the county-level map:

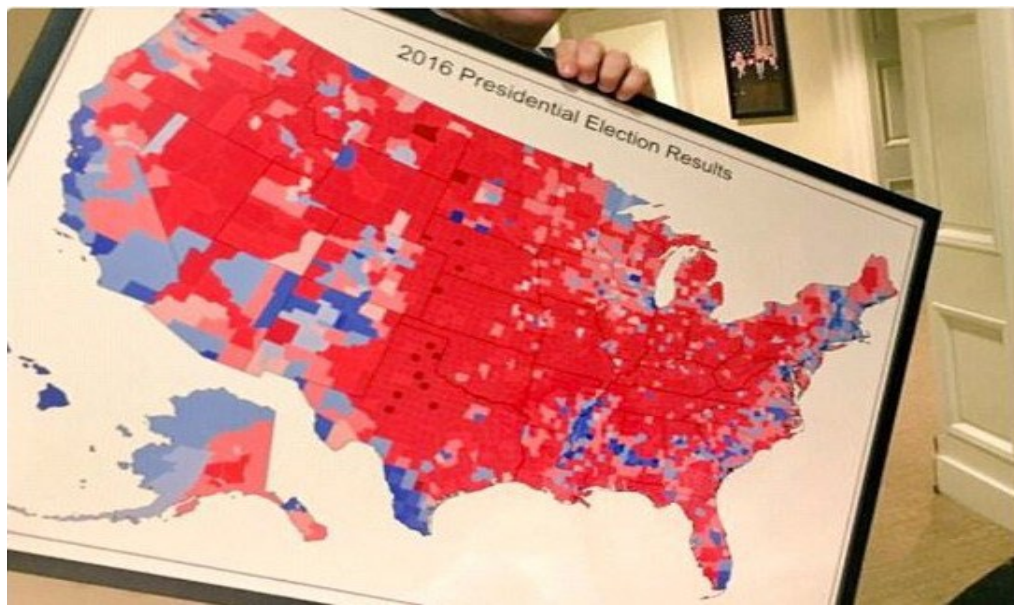
Red: 80%  
Blue: 20%

### SHARE OF THE POPULAR VOTE IN THE 2016 PRESIDENTIAL ELECTION

Donald Trump  
Hillary Clinton  
Other candidates







Surface on the county-level map:

Red: 80%  
Blue: 20%

## SHARE OF THE POPULAR VOTE IN THE 2016 PRESIDENTIAL ELECTION



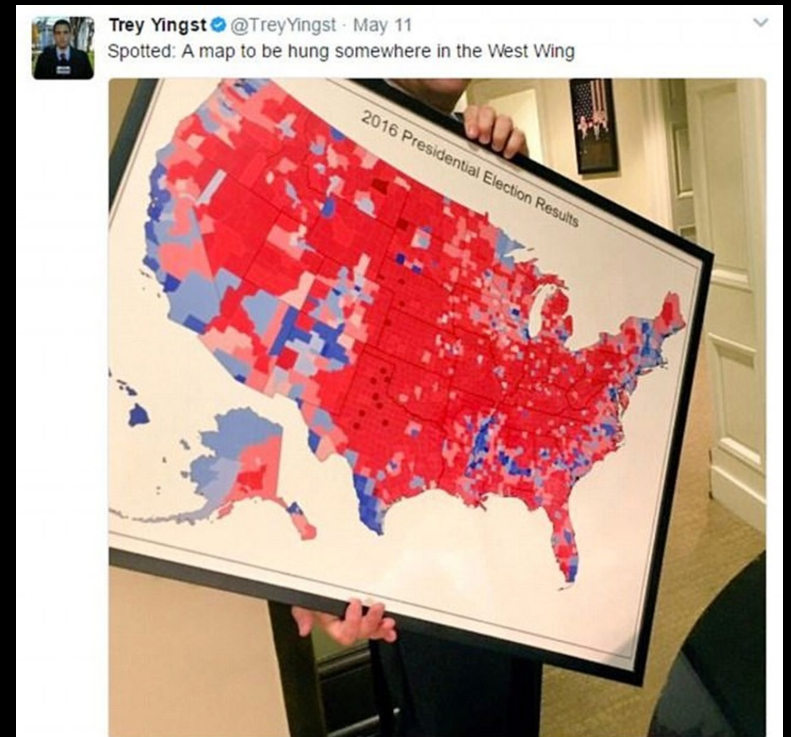
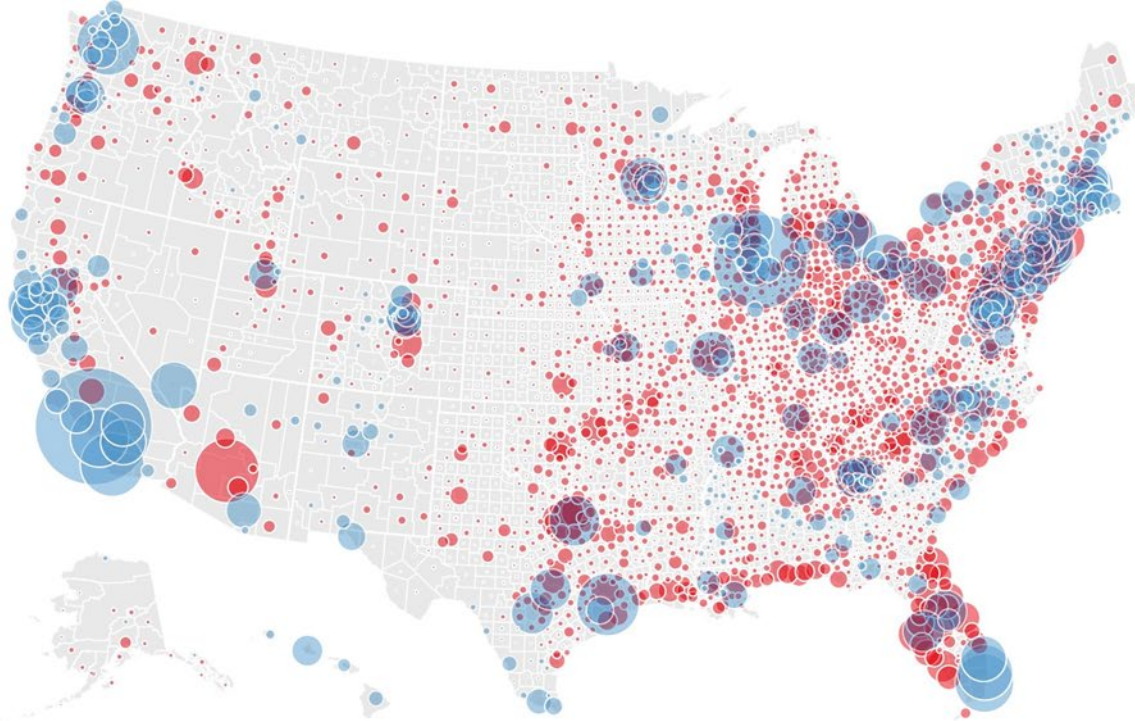
## PERCENTAGE OF ELIGIBLE VOTERS



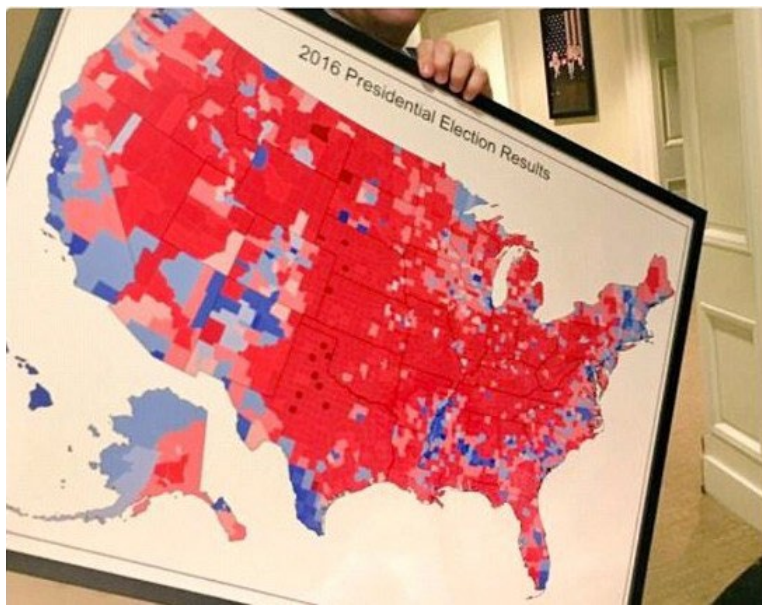
# Surface on the county-level map:

Red: 80 %  
Blue: 20 %

Bubble size is proportional to the number of votes received just by the candidate who won on each county







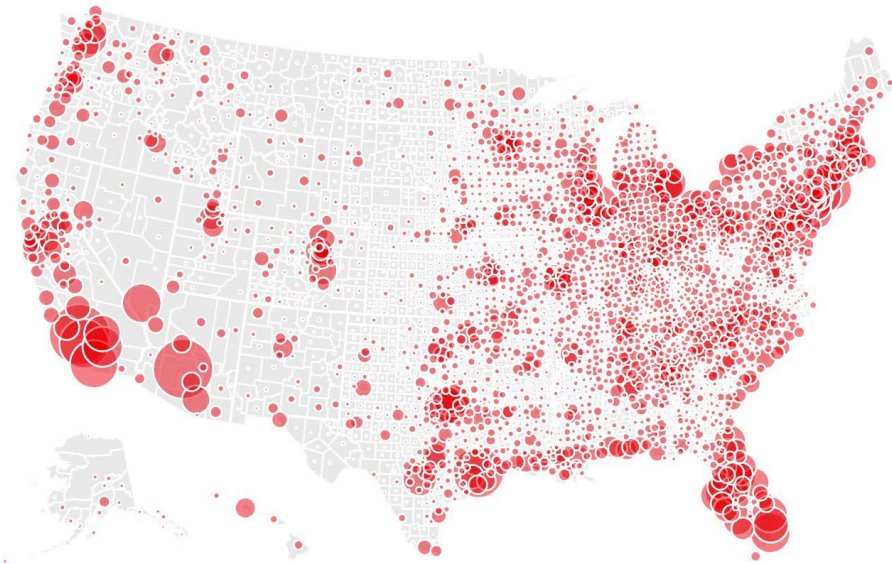
### SHARE OF THE POPULAR VOTE IN THE 2016 PRESIDENTIAL ELECTION



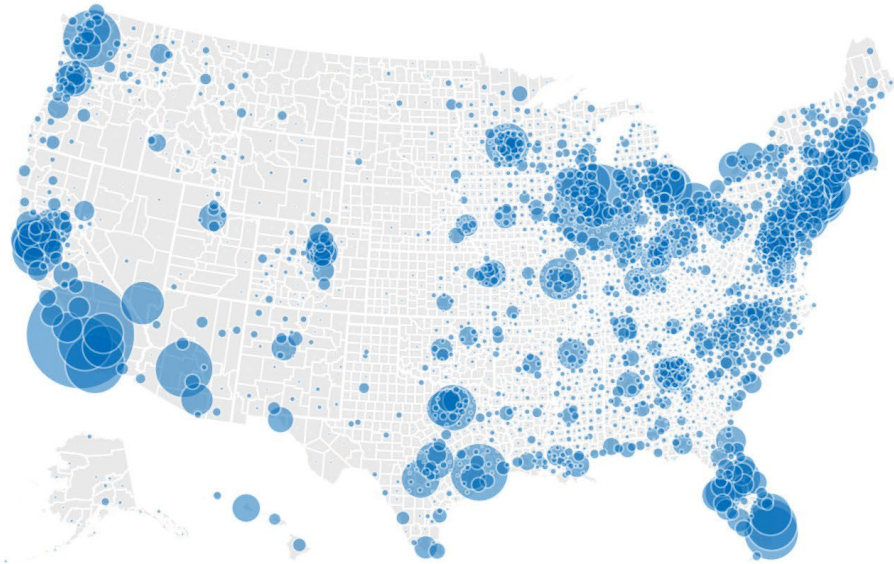
### PERCENTAGE OF ELIGIBLE VOTERS



### VOTES FOR DONALD TRUMP



### VOTES FOR HILLARY CLINTON



Bubble size is proportional to the number of votes per county



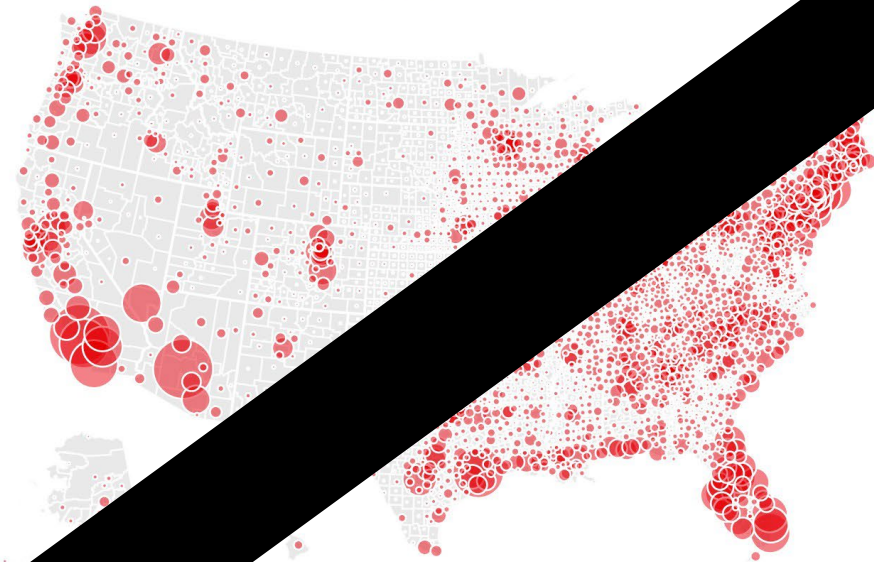
### SHARE OF THE POPULAR VOTE IN THE 2016 PRESIDENTIAL ELECTION



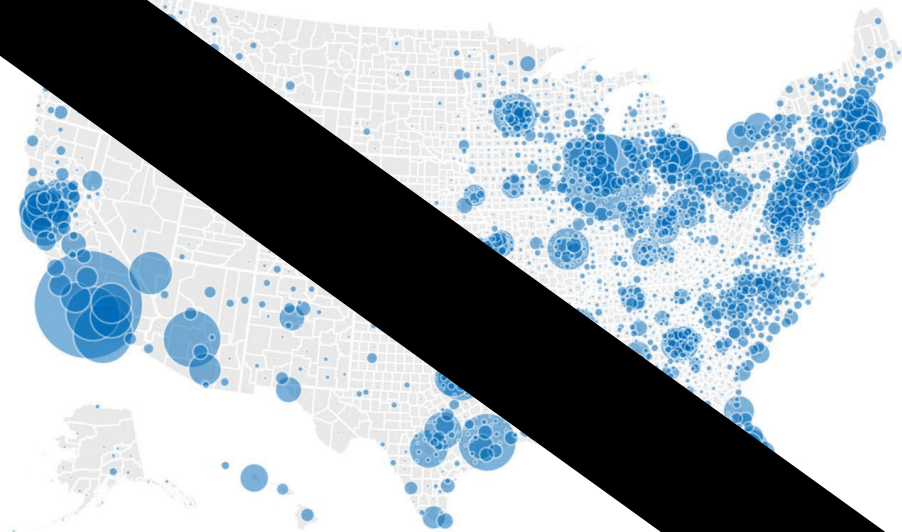
### PERCENTAGE OF ELIGIBLE VOTERS



### VOTES FOR DONALD TRUMP



### VOTES FOR HILLARY CLINTON



Bubble size is proportional to the number of votes per county



This is what truly matters in a presidential election

ELECTORAL  
VOTES

TRUMP  
304

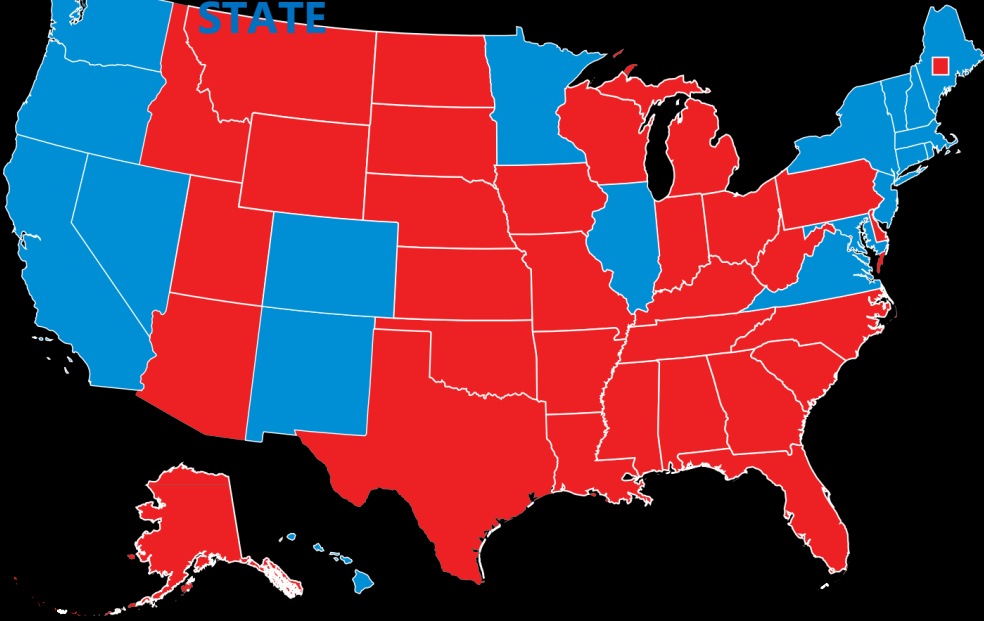
Other:

CLINTON  
227

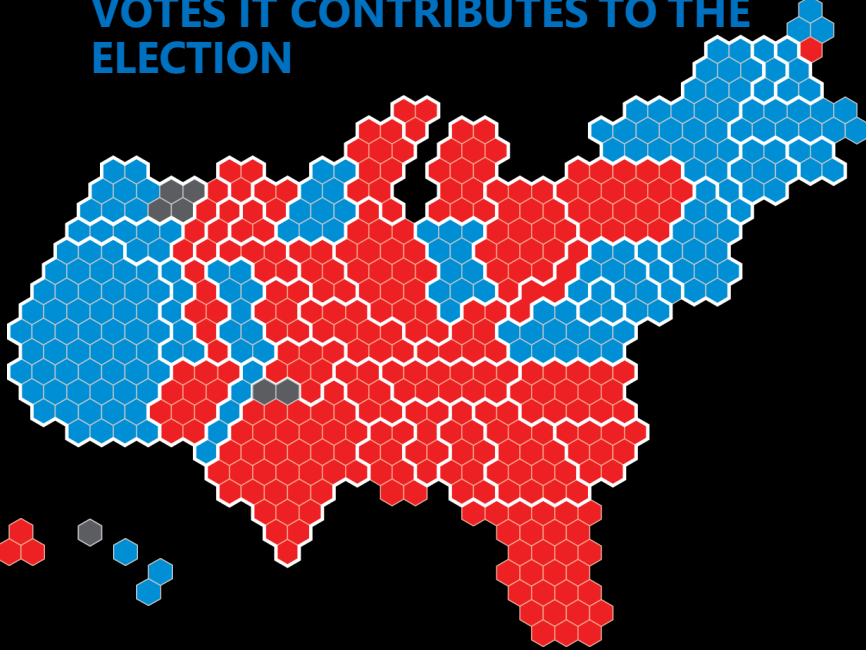


270

WHO WON ON EACH  
STATE



STATE SIZE ADJUSTED BY ELECTORAL  
VOTES IT CONTRIBUTES TO THE  
ELECTION



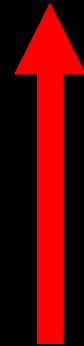
A FRAMEWORK

+

ONE OR MORE VISUAL ENCODINGS

+

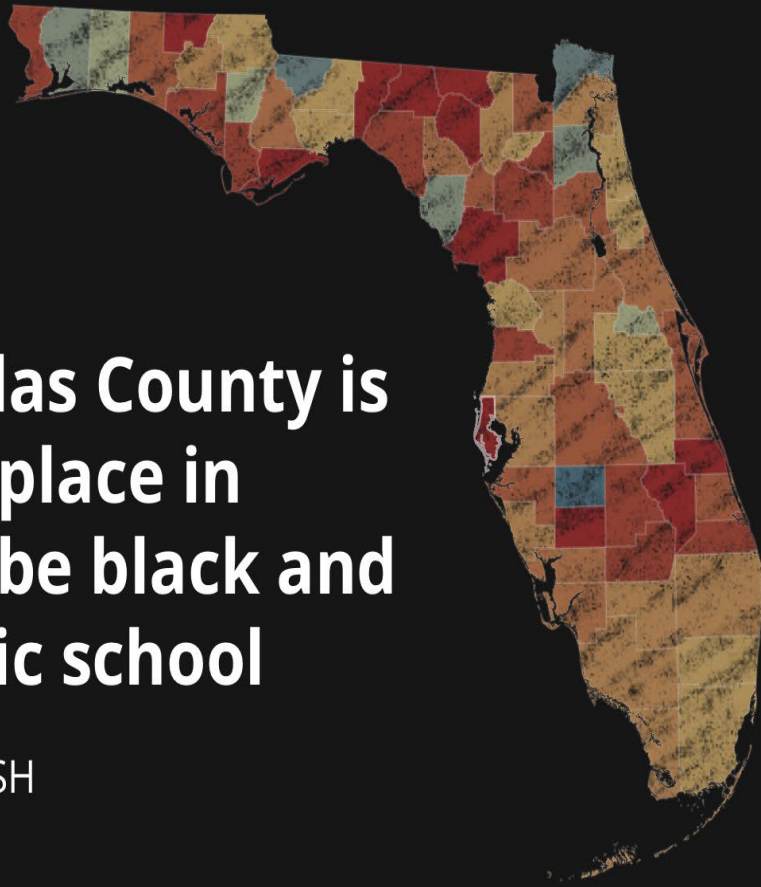
ANNOTATIONS



# Why Pinellas County is the worst place in Florida to be black and go to public school

By NATHANIEL LASH  
*Times Staff Writer*

AUG. 12, 2015



# The Tampa Bay Times

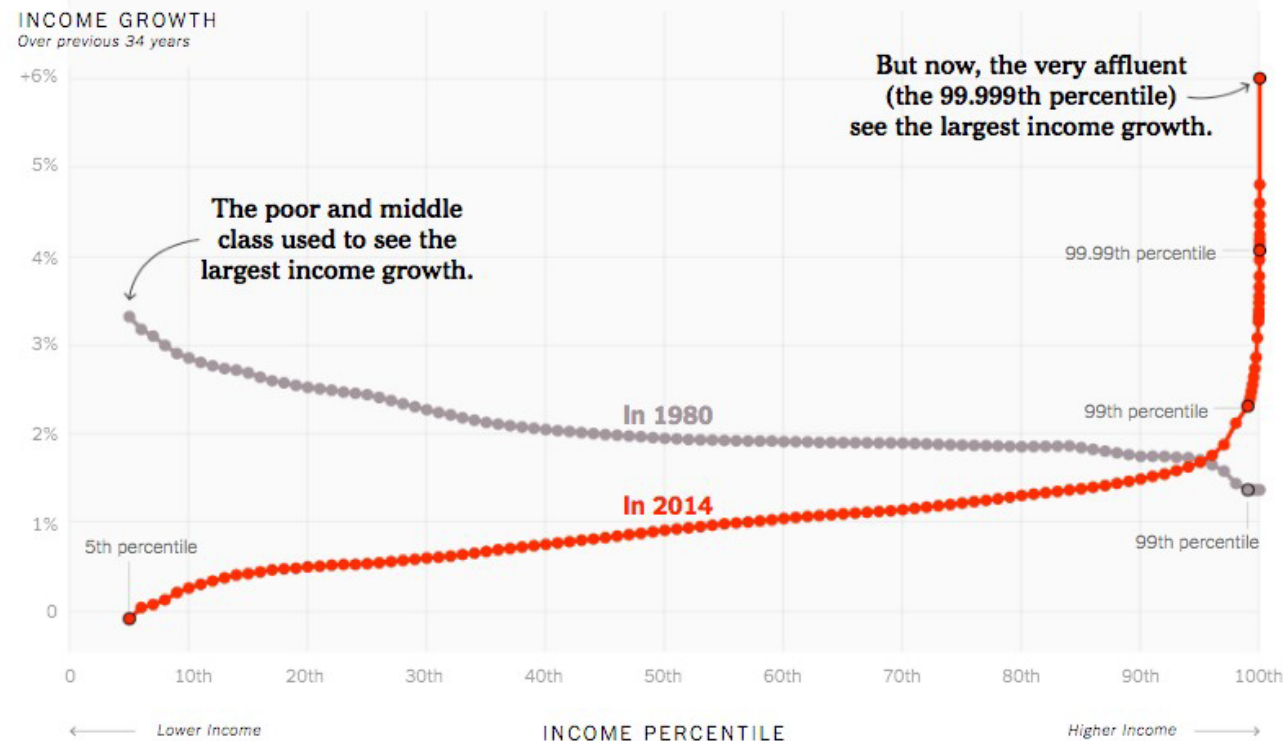
<http://www.tampabay.com/projects/2015/investigations/pinellas-failure-factories/chart-failing-black-students/>

# The New York Times

## Our Broken Economy, in One Simple Chart

By DAVID LEONHARDT

AUG. 7, 2017



Note: Inflation-adjusted annual average growth using income after taxes, transfers and non-cash benefits.

<https://www.nytimes.com/interactive/2017/08/07/opinion/leonhardt-income-inequality.html>



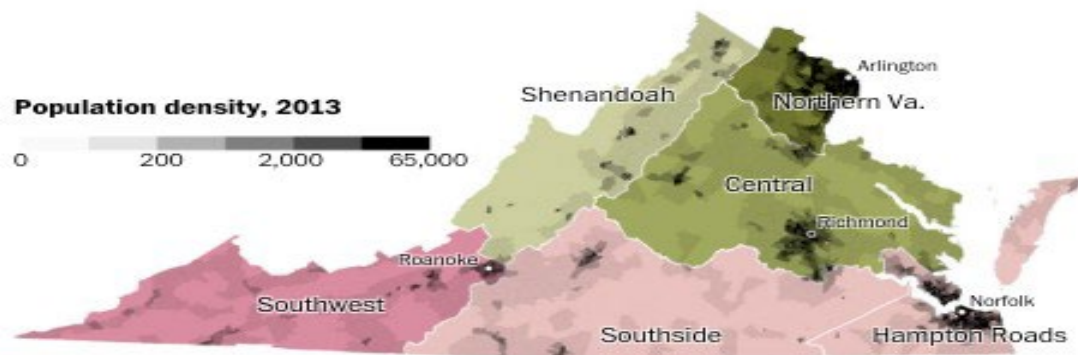
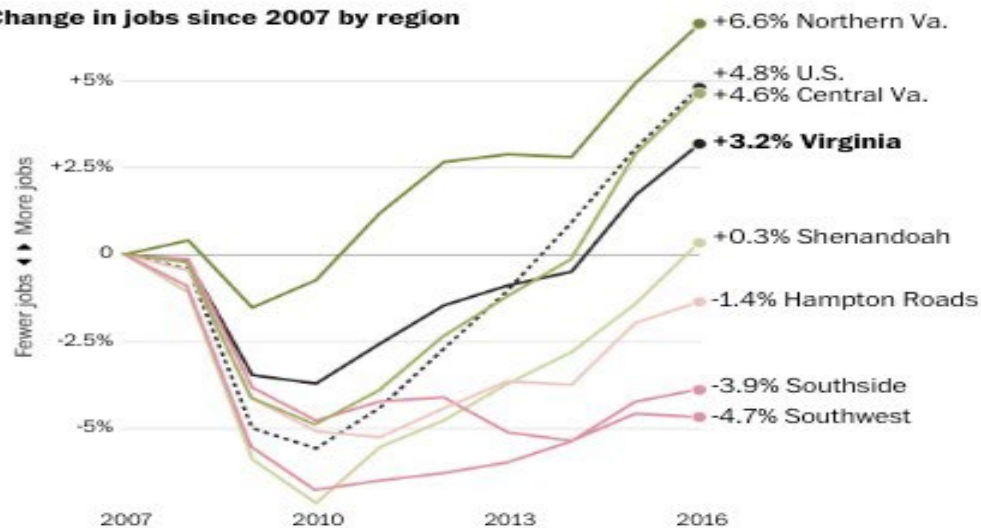
# Virginia's uneven recovery mirrors its growing political divide

Urban areas of the state have mostly recovered all the jobs lost in recession — and then some. But the southern half of Virginia is still waiting.

By Darla Cameron and Ted Mellnik

Nov. 3, 2017

Change in jobs since 2007 by region



The Washington Post

<https://www.washingtonpost.com/graphics/2017/local/virginia-politics/jobs/>







# Data

[List of indicators](#) • [Doubt](#) • [Geography](#) • [Documentation](#) • [Data blog](#)

The table below lists all indicators displayed in Gapminder World. Click the name of the indicator or the data provider to access information about the indicator and a link to the data provider.

Indicators labeled “Various sources” are compiled by Gapminder. They can be reused freely but please attribute Gapminder.

## List of indicators in Gapminder World

Gapminder

Indicator name	Data provider	Category	Subcategory	Download	View	Visualize
Adults with HIV (% ,age 15-49)	Based on UNAIDS	Health	HIV			
Age at 1st marriage (women)	Various sources	Population				
Aged 15+ employment rate (%)	International Labour Organization	Work	Employment rate			

<https://www.gapminder.org/data/>





# eurostat

## Your key to European statistics

Sign In | Register

Legal notice | RSS | Cookies | Links | Contact

English

Type a keyword, a publication title, a dataset title...



News

Data

Publications

About Eurostat

Help

European Commission > Eurostat > Data > Database

DATA

### ▲ DATABASE

Information

Browse statistics by theme

Statistics A - Z

Population Census 2011

Experimental statistics

Bulk download

### ▲ Web Services

SDMX Web Services

Json and Unicode Web Services

Access to microdata

GISCO: Geographical Information and maps

### ▲ Metadata

ESS Reference Metadata

Reporting Standards

IMPORTANT MESSAGE

New aggregate for European Union without UK > [more](#)

DATABASE

Data Navigation Tree

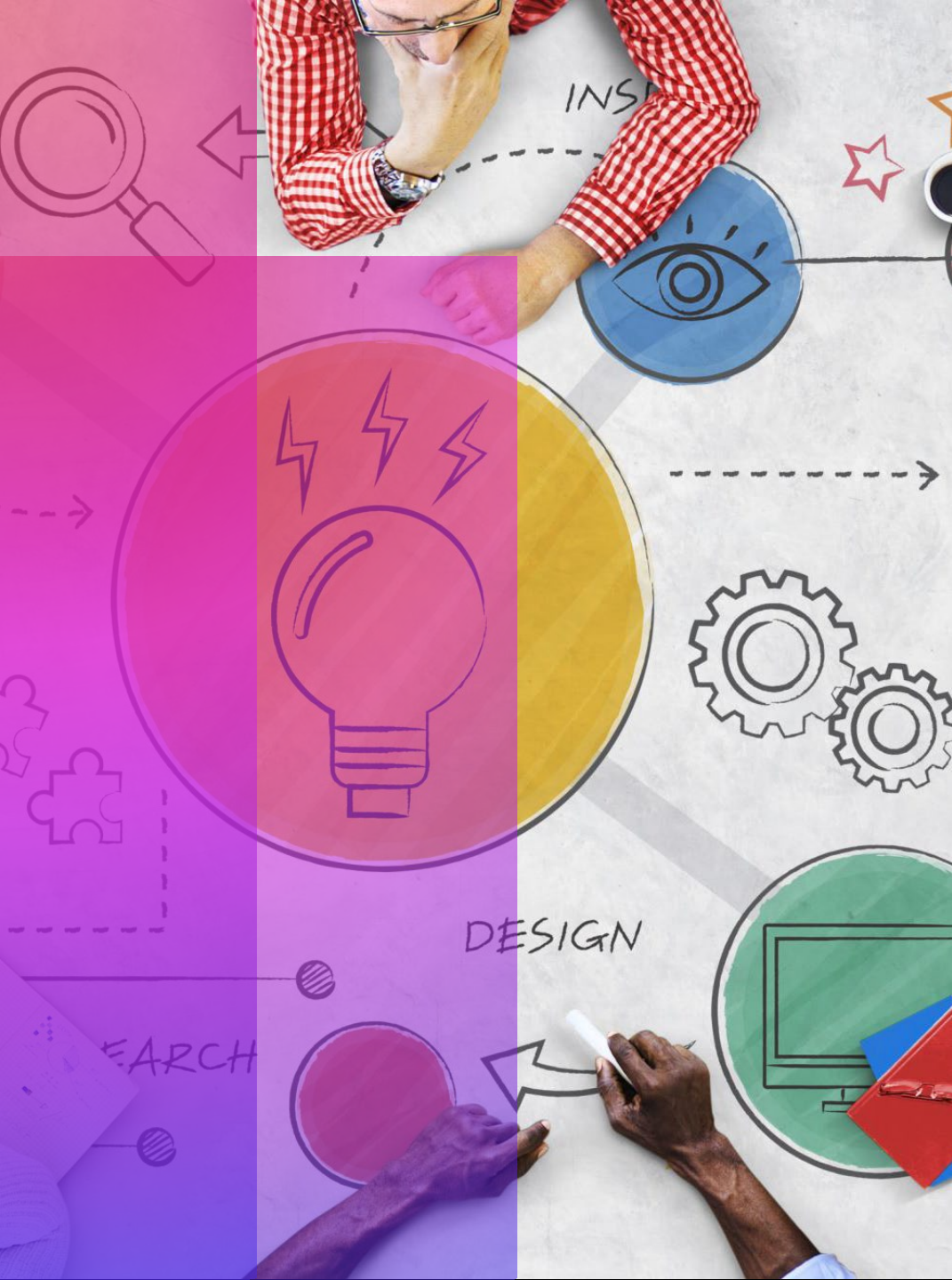
Database by themes

- General and regional statistics
- Economy and finance
- Population and social conditions
- Industry, trade and services
- Agriculture, forestry and fisheries
- International trade
- Transport
- Environment and energy
- Science, technology, digital society

Tables by themes

<http://ec.europa.eu/eurostat/data/database>

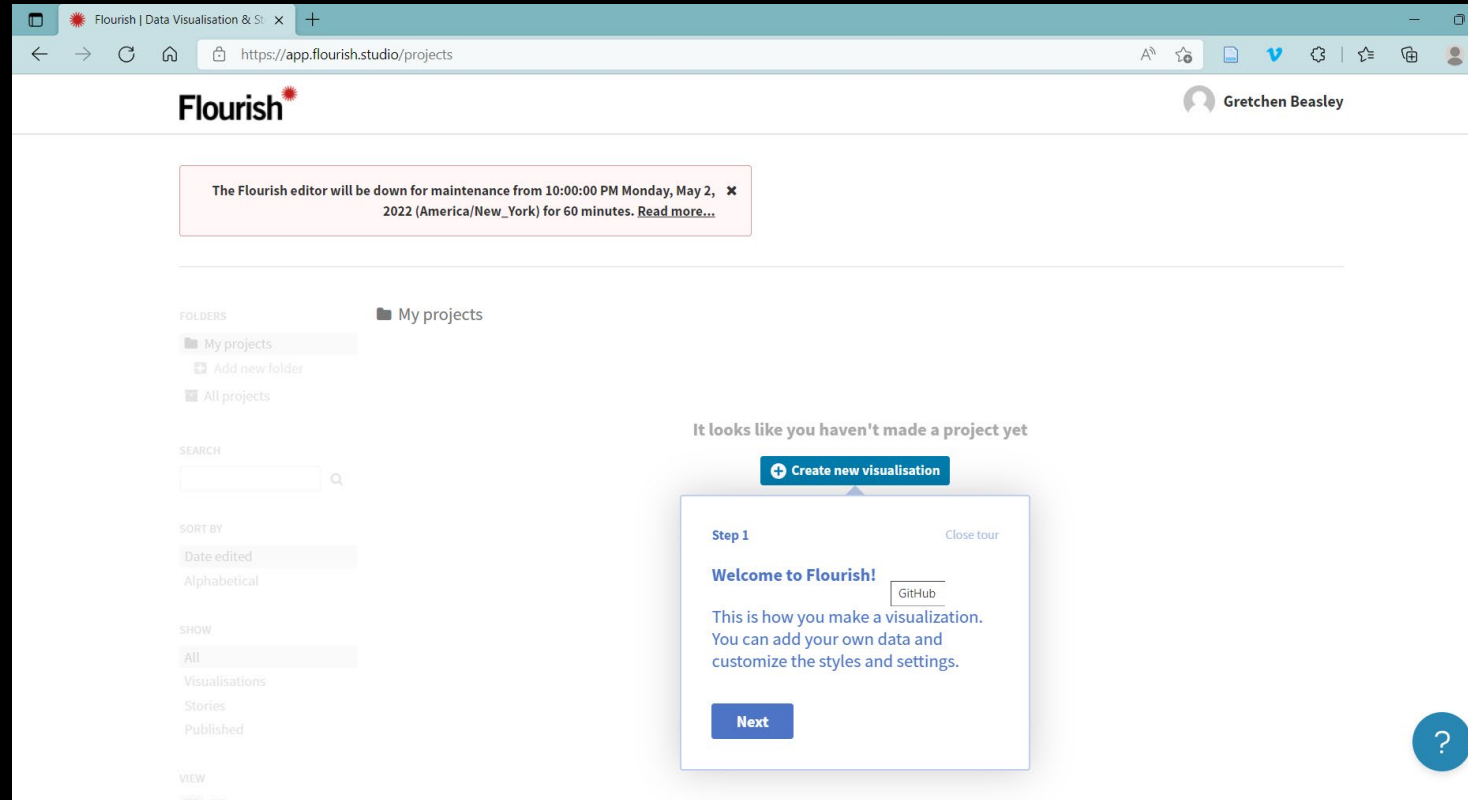




# Flourish Data Visualization

Skills Assessment

# Getting Started With Flourish



- To get started, head to the [Flourish website](https://www.flourish.studio) and create an account.

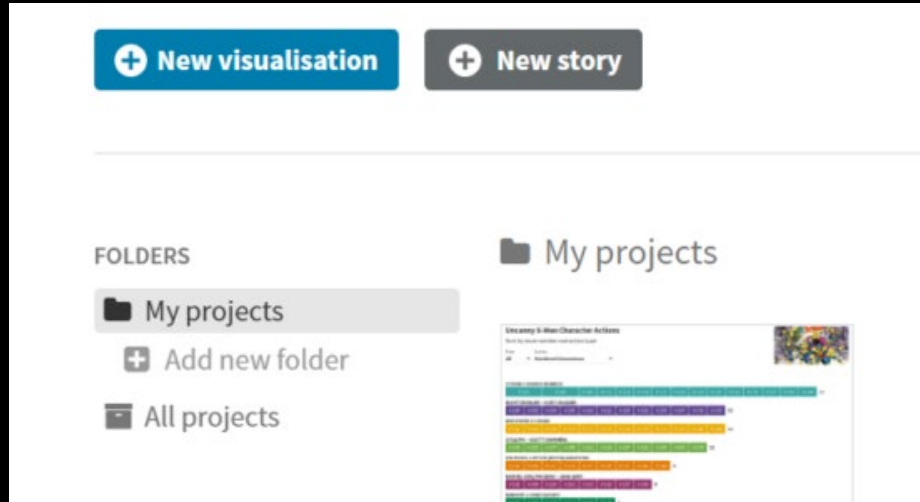


A photograph of a server room with rows of server racks. The racks are filled with equipment, and many lights are glowing, creating a blue and white light pattern. The perspective is from the end of a long aisle, looking down the center. The floor has a grid pattern. The overall atmosphere is technical and modern.

# Getting the Data

[Detroit Police Department Citizen Complaints: 2016-April 2019 data set.](#)

# Creating Basic Visualizations and Importing Data



## Line, bar and pie charts

Basic types of chart, single or in a grid

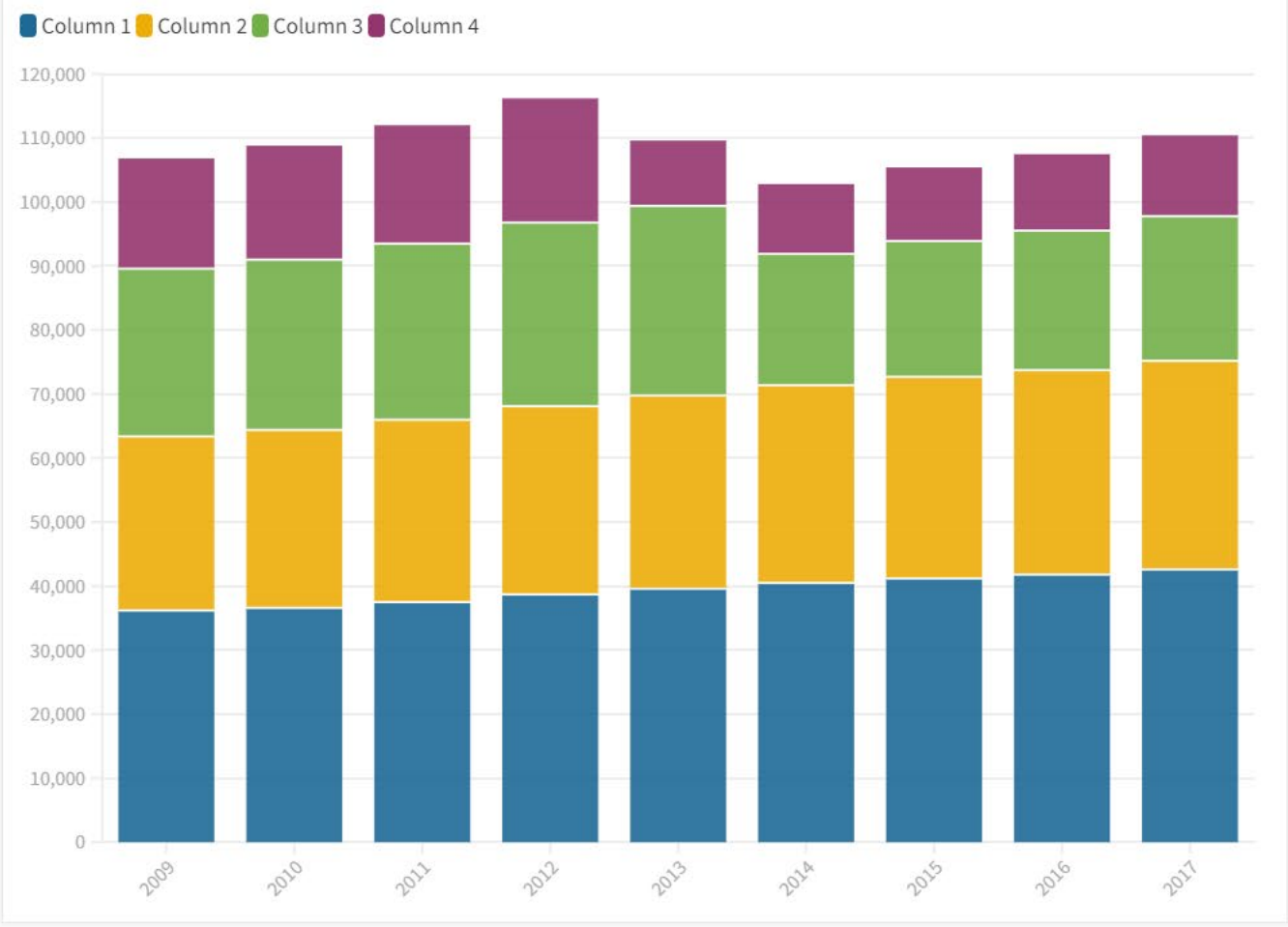
### STARTING POINTS ?







Preview Data



Selected template  
**Line, bar and pie charts 24.0.0**

**Chart type**  
Column chart (stacked)

Grid mode  
Single chart Grid of charts

Height mode  
Auto Standard Aspect ratio

Sort mode  
Data sheet Value Label

Controls & filters

- Colors
- Bars
- Labels
- X axis
- Y axis
- Plot background
- Number and date formatting

Search for setting

Preview Data

Data

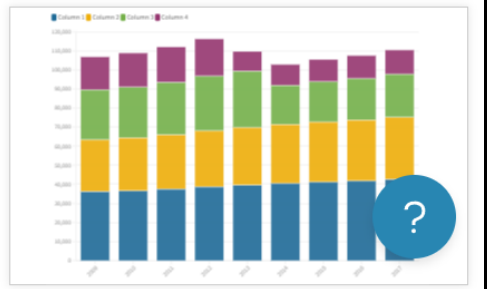
	A	B	C	D	E
1	Year	Column 1	Column 2	Column 3	Column 4
2	2009	36200	27200	26200	17200
3	2010	36600	27800	26600	17800
4	2011	37500	28500	27500	18500
5	2012	38700	29400	28700	19400
6	2013	39600	30200	29600	10200
7	2014	40500	30900	20500	10900
8	2015	41200	31500	21200	11500
9	2016	41803	31931	21803	11931
10	2017	42600	32600	22600	12600

Upload data

Data

SELECT COLUMNS TO VISUALISE

- Labels/time  REQUIRED A
- Values  B-E
- Charts grid
- Row filter
- Info for custom popups



+ 1 more rows

Q

# Uploading Data

The screenshot shows a web application interface for data management. At the top, there are navigation buttons: "Create a story" and "Export & publish". Below this, there are tabs for "Preview" and "Data". The main area displays a data table with columns labeled "Column 3" and "Column 4". A red arrow points from the table to the "Upload data" dropdown menu on the right. The menu has two options: "Upload data file" (checked) and "Upload data and merge". Below the menu, there are settings for "Values", "Charts grid", "Row filter", and "Info for custom popups". At the bottom right, there is a stacked bar chart with a legend and a question mark icon.

Column 3	Column 4
26200	17200
26600	17800
27500	18500
28700	19400
29600	10200
20500	10900
21200	11500
21803	11931
22600	12600

**Upload data**

- Upload data file**  
Replace data with uploaded file (Excel, CSV, TSV, JSON, GeoJSON)
- Upload data and merge**  
Merge current sheet with uploaded file (Excel, CSV, TSV, JSON, GeoJSON)

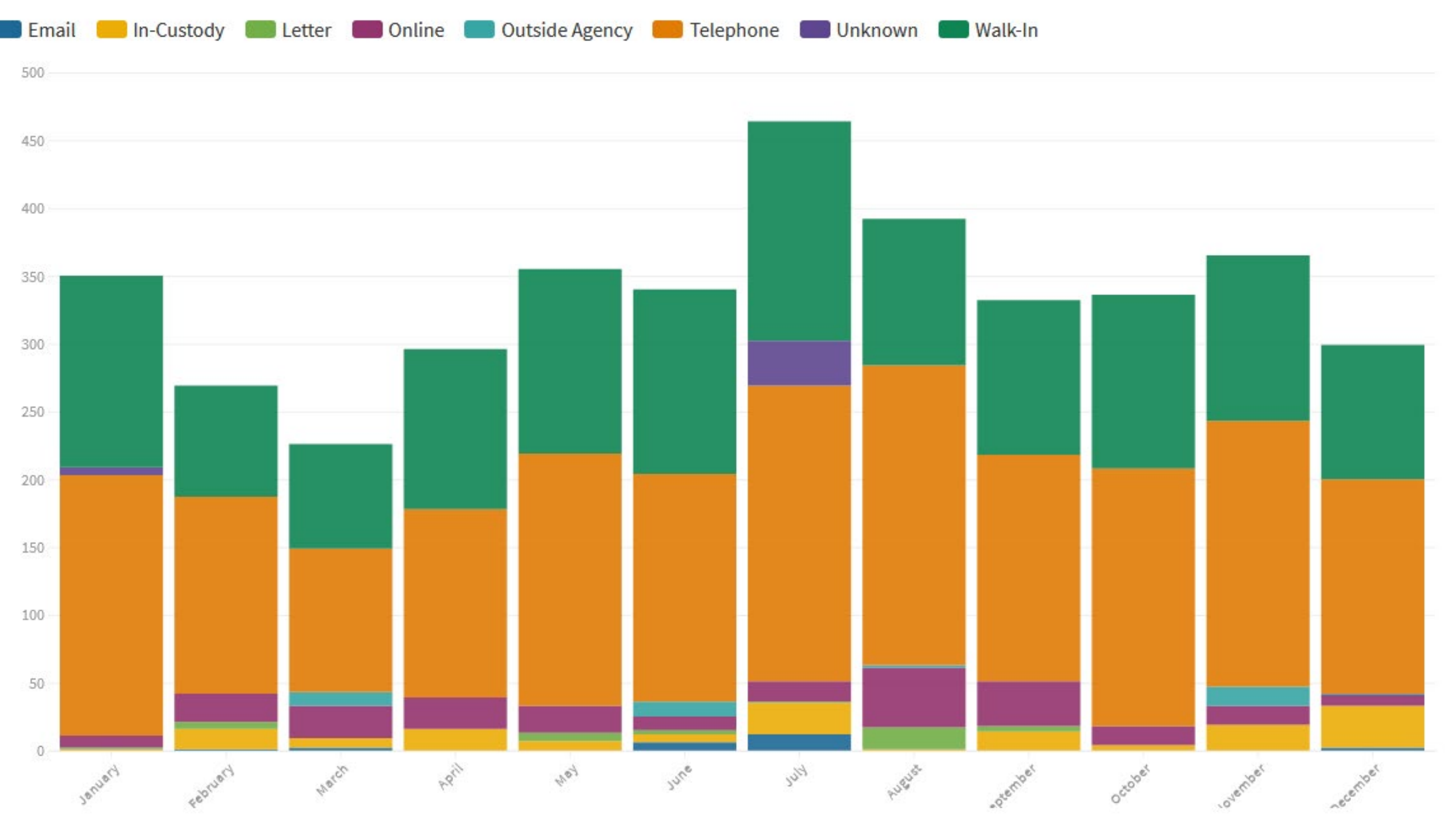
**Values** [A] [B-E]

**Charts grid**

**Row filter**

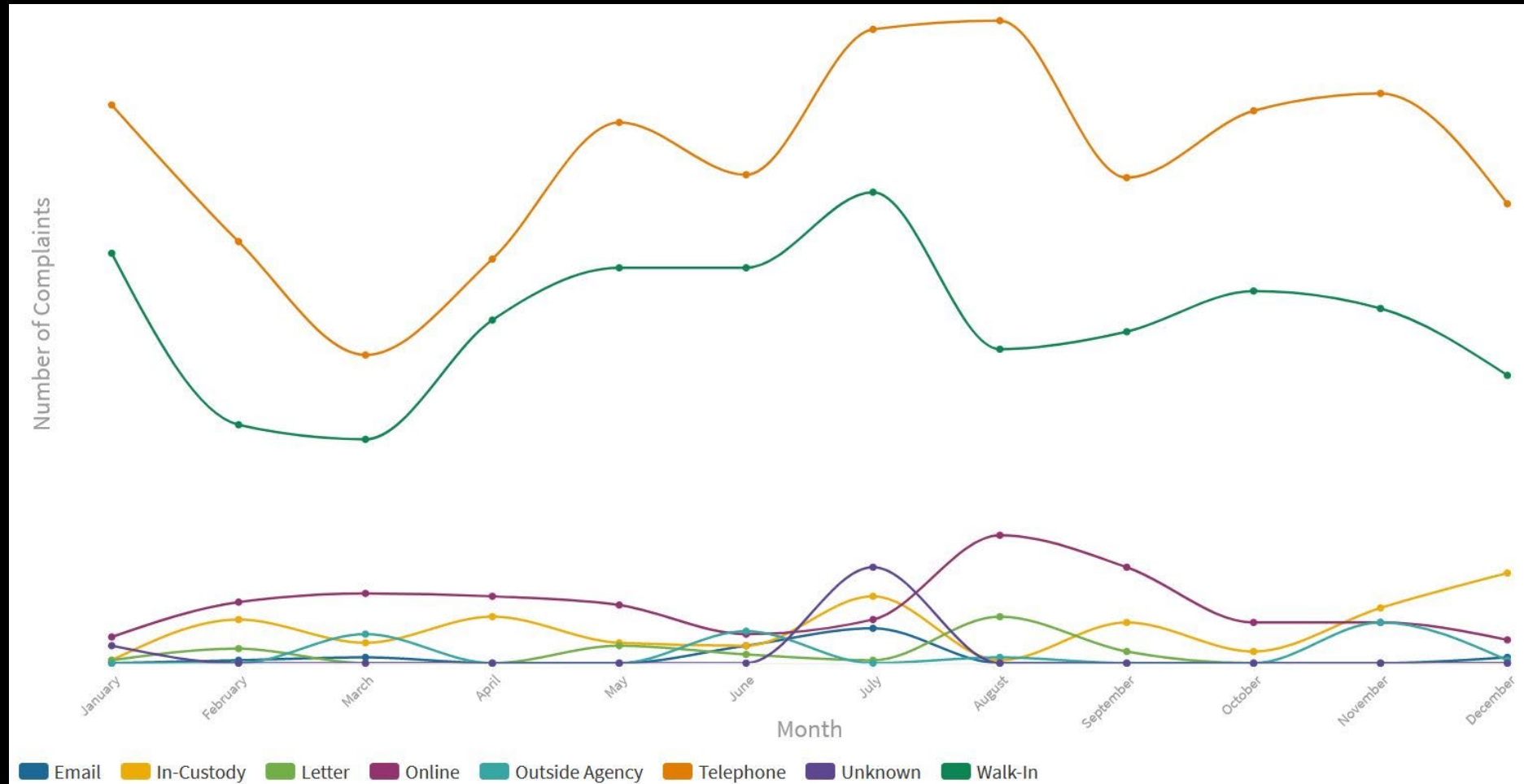
**Info for custom popups**

5:01 PM 5/2/2022 36





# Other Visualizations



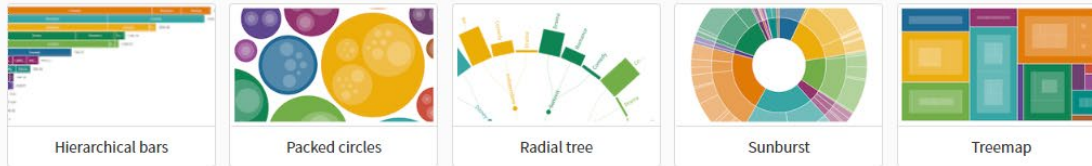
# Hierarchical Chart



## Hierarchy

A template for grouping data and visualising it hierarchically

### STARTING POINTS ?



## Line chart race

An animated line or "bump" chart to show changing rank over time

### STARTING POINTS ?



## Heatmap

Reveal patterns across one or two dimensions

## Radar chart

Compare entities across multiple metrics with radar/spider charts, star charts and radial bar charts

## Cards

Ideal for displaying blocks of content in a grid or carousel

### STARTING POINTS ?



Data ▾
Q 
Saved [Import your data](#)

	A	B	C	D	E	F	G	H	I
1	Month	Email	In-Custody	Letter	Online	Outside Agency	Telephone	Unknown	Walk-In
2	January	0	1	1	9	0	192	6	141
3	February	1	15	5	21	0	145	0	82
4	March	2	7	0	24	10	106	0	77
5	April	0	16	0	23	0	139	0	118
6	May	0	7	6	20	0	186	0	136
7	June	6	6	3	10	11	168	0	136
8	July	12	23	1	15	0	218	33	162
9	August	0	1	16	44	2	221	0	108
10	September	0	14	4	33	0	167	0	114
11	October	0	4	0	14	0	190	0	128
12	November	0	19	0	14	14	196	0	122
13	December	2	31	0	8	1	158	0	99

**Select columns to visualise**

Fill in the column id you want to visualise. Add multiple columns with a comma or hyphen (eg. A,B or A-C)

Data Data ▾

**Nesting** A

Choose categorical columns to nest by (e.g. Lead Studio, Genre).

**Size by** B-I

(Optional) Choose numeric columns to size by (e.g. Worldwide Gross). If more than 1 is chosen, a dropdown will appear in the visualisation which lets the user choose. Rows with negative values are excluded.

**Filter**

(Optional) Choose categorical columns to filter by. A dropdown will appear in the visualisation.

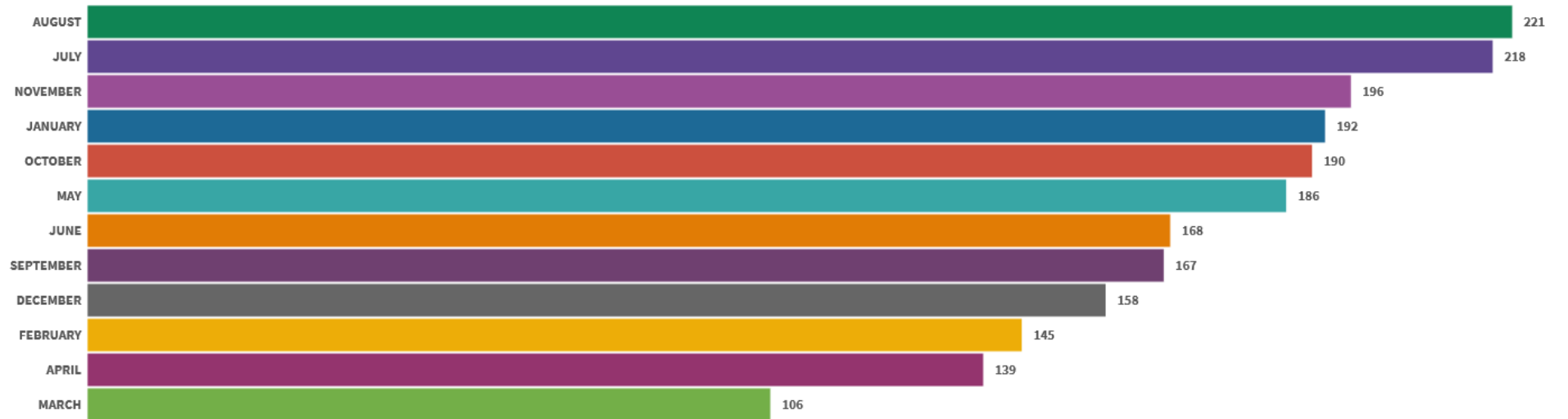
# Hierarchical Chart

## Total Detroit Police Department Complaints

Subdivided by Complaint Type

Size by:

Telephone



# Hierarchical Chart



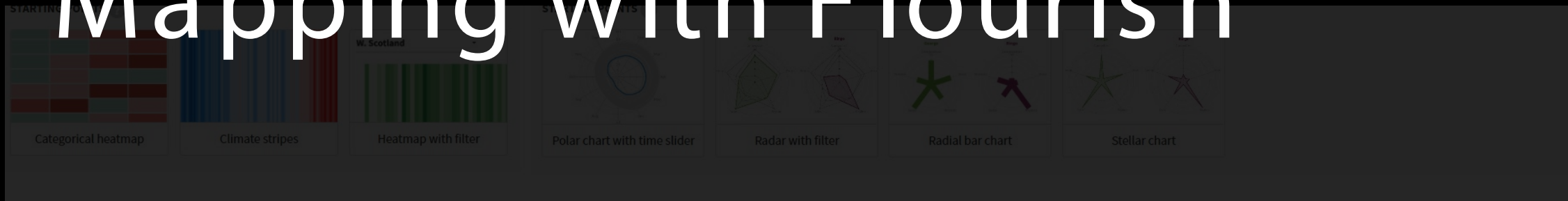


# Mapping with Flourish

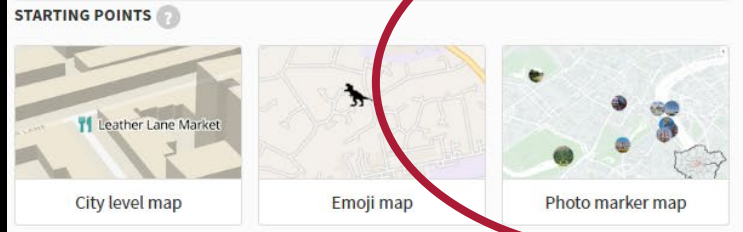
- For this final activity, we'll be working with two new data sets—the '[Detroit PD Motor Vehicle Arrests 2017-19.xlsx](#)' file and the '[Detroit PD Dataset Categories.xlsx](#)' file—to create a marker map.



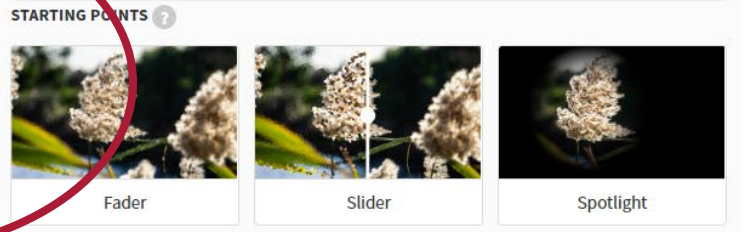
# Mapping with Flourish



**Marker map**  
Marker or locator map with emoji, icons or images for places and an inset map for context



**Photo slider**  
A simple interactive template to compare two pictures.



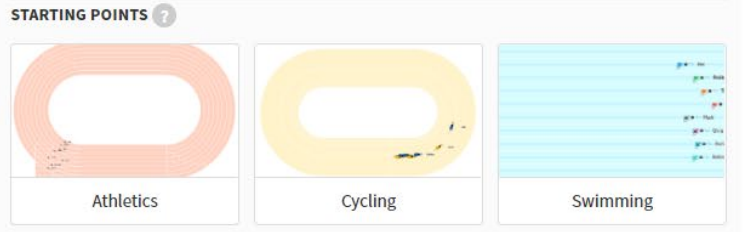
**Pictogram**  
A Flourish template for creating pictogram charts



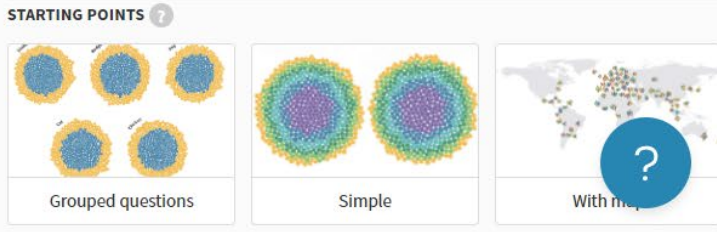
**Sankey diagram**  
Sankey visualisation



**Sports race**  
Create animated sports races over preset or custom tracks



**Survey**  
Powerful interactive 'dot' visualisation, good for exploring survey results and more



Locations Categories Regions Inset Map Regions

	A	B	C	D	E
1	Landmark	Latitude	Longitude	Category	
2	Big Ben	51.5007	-0.1246	https://public.flourish.studio/uploads/f1d19f2e-1f4c-47fa-968c-f6facc8b79bc.png	
3	Palace of Westminster	51.4995	-0.1248	https://public.flourish.studio/uploads/14269248-3f5d-4d24-a534-eb95051ffb36.png	
4	Westminster Abbey	51.4993	-0.1273	https://public.flourish.studio/uploads/79aad662-bfd1-4bb4-b431-eb95051ffb36.png	
5	London Eye	51.503399	-0.119519	https://public.flourish.studio/uploads/202c4a21-6c82-41be-9630-713ab14a1039.png	
6	Tower of London	51.508530	-0.076132	https://public.flourish.studio/uploads/8d753229-12c3-4859-bbb1-6a5c4f4a37b7.png	0.3
7	Buckingham Palace	51.501476	-0.140634	https://public.flourish.studio/uploads/ca288297-4456-4c3c-ab9d-03d70637bca4.png	0.3
8	Trafalgar Square	51.504831314	-0.123499506	https://public.flourish.studio/uploads/6e06e1a3-635a-4276-9338-6924d63220f4.png	
9	Hyde Park	51.505164646	-0.158166034	https://public.flourish.studio/uploads/1d3fc489-fa42-4d47-8e4a-3d637b48c5f6.png	0.4
10	Regent's Park	51.525997896	-0.153999384	https://public.flourish.studio/uploads/90e39077-d669-451e-a679-8bc4ca06aa7a.png	
11	Picadilly Circus	51.510067	-0.133869	https://public.flourish.studio/uploads/e8623603-3de4-4ba1-815c-69febe413840.png	
12	Paddington Station	51.516674400	-0.176932800	https://public.flourish.studio/uploads/584e319f-ae2f-4b66-8962-79097b7a0443.png	

Upload data

Locations

SELECT COLUMNS TO VISUALISE

Latitude REQUIRED  B

Longitude REQUIRED  C

Marker  D

Name  A

Description

Photo

# Mapping with Flourish

# Mapping with Flourish – Categories

Untitled visualisation  
by Gretchen Boasley

Create a story Export & publish

Preview Data

	B	C	D	E
Icon	circle	square	circle	circle
Icon size	0.3	0.3	0.3	0.3
Color	gray	red	green	blue
Opacity	1	1	1	1

Upload data Saved

### Categories

SELECT COLUMNS TO VISUALISE

Category A

Marker image B

Size C

Icon colour D

Opacity E

Legend:  
● UNAUTHORIZED USE OF A MOTOR VEHICLE (JOY RIDING)  
● LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE  
● LARCENY - THEFT OF MOTOR VEHICLE PARTS / ACCESSORIES  
● MOTOR VEHICLE AS STOLEN PROPERTY (RECOVERED ONLY)  
● MOTOR VEHICLE THEFT



# Mapping with Flourish - Locations

Preview Data

	A	B	C	D	E
1	Landmark	Latitude	Longitude	Category	
2	Big Ben	51.5007	-0.1246	https://public.flourish.studio/uploads/f1d19f2e-1f4c-47fa-968c-f6acc8b79bc.png	
3	Palace of Westminster	51.4995	-0.1248	https://public.flourish.studio/uploads/14269248-3f5d-4d24-a534-eb95051ffb36.png	
4	Westminster Abbey	51.4993	-0.1273	https://public.flourish.studio/uploads/79aad662-bfd1-4bb4-b431-eb86f974c16.png	
5	London Eye	51.5033	-0.119519	https://public.flourish.studio/uploads/202c4a21-6c82-41be-9630-713ab14a1039.png	
6	Tower of London	51.5085	-0.076132	https://public.flourish.studio/uploads/8d753229-12c3-4859-bbb1-6a5c4f4a37b7.png	0.3
7	Buckingham Palace	51.501476	-0.140634	https://public.flourish.studio/uploads/ca288297-4456-4c3c-ab9d-03d70637bca4.png	0.3
8	Trafalgar Square	51.508013	-0.1277995	https://public.flourish.studio/uploads/6e06e1a3-635a-4276-9338-6924d63220f4.png	
9	Hyde Park	51.50746	-0.158167	https://public.flourish.studio/uploads/1d3fc489-fa42-4d47-8e4a-3d637b48c5f6.png	0.4
10	Regent's Park	51.525997896	-0.153999384	https://public.flourish.studio/uploads/90e39077-d669-451e-a679-8bc4ca06aa7a.png	
11	Picadilly Circus	51.510067	-0.133869	https://public.flourish.studio/uploads/e8623603-3de4-4ba1-815c-69febe413840.png	
12	Paddington Station	51.516674400	-0.176932800	https://public.flourish.studio/uploads/584e319f-ae2f-4b66-8962-79097b7a0443.png	

Upload data Saved

SELECT COLUMNS TO VISUALISE

- Latitude  REQUIRED **B**
- Longitude  REQUIRED **C**
- Marker  **D**
- Name  **A**
- Description
- Photo



+ 1 more rows

Q

# Mapping with Flourish – Pop-ups

Create a story Export & publish

Preview Data

charge_description	incident_timestamp
VEHICLE	
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-20T15:30:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-28T16:30:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-06T20:00:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-22T08:45:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-18T11:05:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-30T18:00:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-16T23:00:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-14T16:45:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-17T15:00:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-25T16:30:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-27T07:00:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2017-01-01T19:30:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	2016-12-28T20:30:00.000Z
LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	

Upload data

Description

Photo

Link

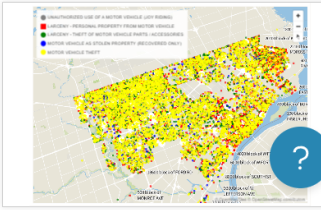
Category

Colour

Size

Extra info for popups

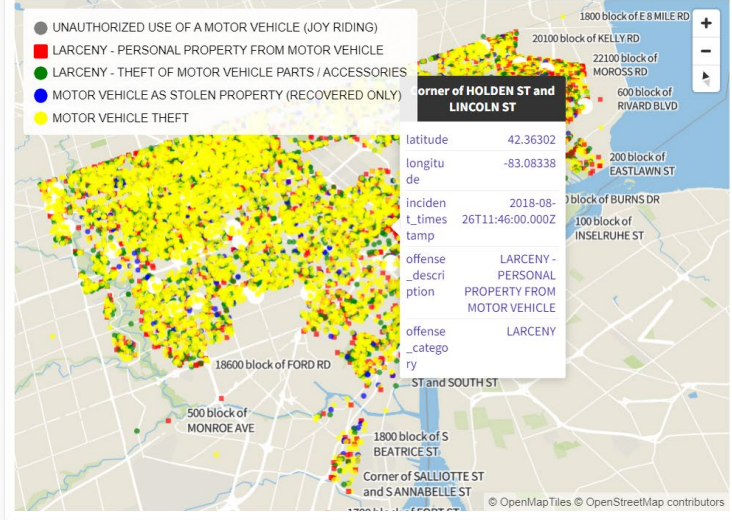
Extra metadata to show in the popup. Add as many columns as you like.



Untitled visualisation by Gretchen Beasley Private

Create a story Export & publish

Preview Data



Legend:

- UNAUTHORIZED USE OF A MOTOR VEHICLE (JOY RIDING)
- LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
- LARCENY - THEFT OF MOTOR VEHICLE PARTS / ACCESSORIES
- MOTOR VEHICLE AS STOLEN PROPERTY (RECOVERED ONLY)
- MOTOR VEHICLE THEFT

Popup content:

latitude	42.36302
longitude	-83.08338
incident_timestamp	2018-08-26T11:46:00.000Z
offense_description	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
offense_category	LARCENY

Selected template: Marker map s.o.o

Base map

Viewport and interaction

Inset map

Markers

Labels

Legend

Regions

Popups & panels

None Popup Panel Both

POPUPS

Popup content

Auto Custom Show popup styles

Max width: 12

Text size: 1

Text color: [Color]

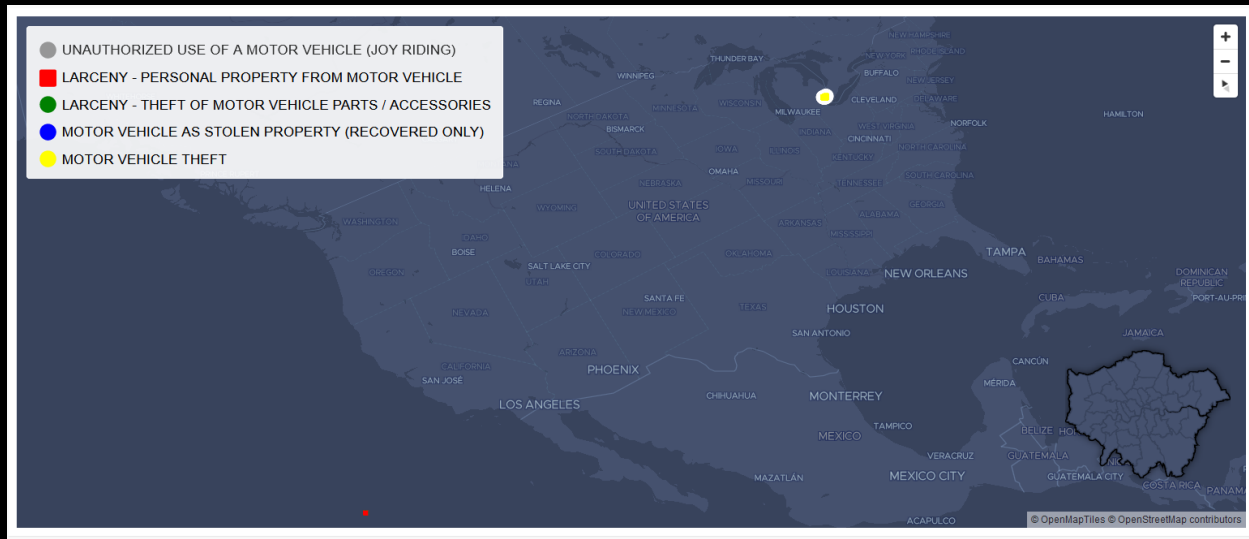
Align: [Option]

Fill color: [Color]

Fill opacity: [Slider]

Padding: [Slider]

Search for setting



Locations	Categories	Regions	Inset Map Regions	
1	A	B	C	D
	address	offense_description	offense_category	charge_description
1522	1000 block of BELLEVUE ST	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1523	9200 block of GRATIOT AVE	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1524	Corner of BAGLEY ST and VERMONT ST	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1525	8200 block of BINGHAM AVE	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1526	200 block of HAGUE ST	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1527	17300 block of HUNTINGTON RD	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1528	19400 block of LENORE AVE	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1529	Corner of ORLEANS ST and E LAFAYETTE ST	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1530	10600 block of W 7 MILE RD	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1531	7400 block of LA SALLE BLVD	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1532	10000 block of WARD ST	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1533	500 block of E LAFAYETTE ST	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1534	18000 block of LIVERNOIS AVE	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE
1535	14100 block of GREENFIELD RD	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE	LARCENY	LARCENY - PERSONAL PROPERTY FROM MOTOR VEHICLE

**Upload data** Saved

SELECT COLUMNS TO VISUALISE

Latitude (REQUIRED) I

Longitude (REQUIRED) H

Marker D

Name A

Description

Photo

↘

1 match <> 🔍 1000 block of belle



# Customizing the Display

**VIEWPORT**

Min zoom: 10.25      Max zoom: 20

Limit viewport bounds

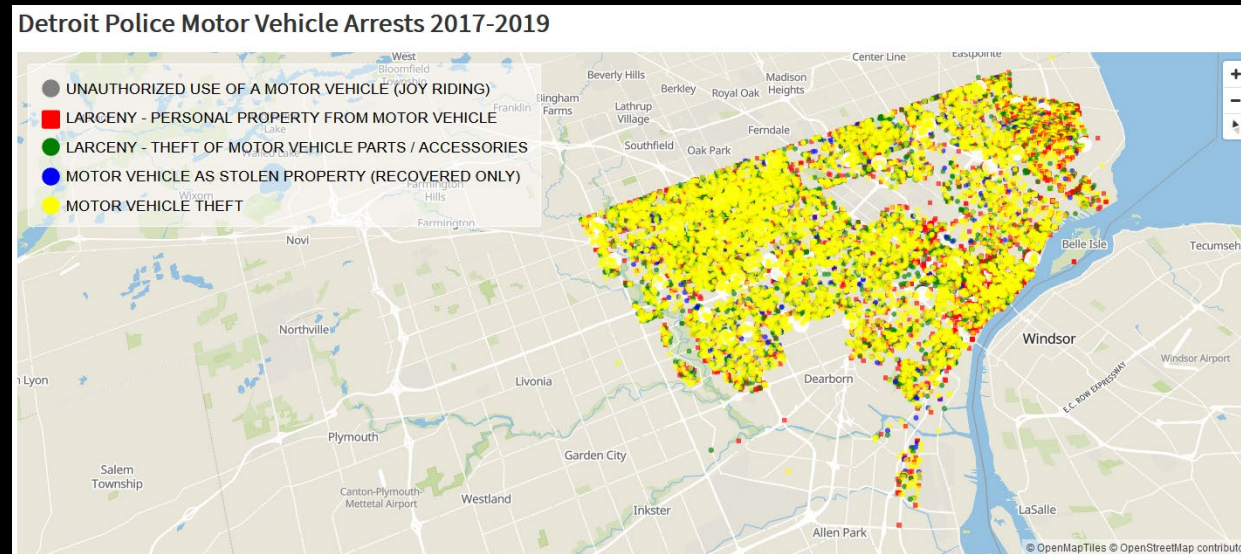
Min latitude: -90      Max latitude: 90

Min longitude: -180      Max longitude: 180

Initial viewport


Auto     Centroid     Bounds

Pitch: 23      Bearing: 20



**Publish this visualisation?**

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# Exporting Your Visualization

# Additional Resources

Although we've explored a few types of visualizations, Flourish Studio offers many more alternative and advanced visualizations not covered in this tutorial. For more information on specific visualizations and features, visit the Flourish [help page](#) and [blog](#). For inspiration for your visualizations, also be sure to visit Flourish's [examples gallery](#) and [Twitter profile](#).

Lastly, always feel free to reach out to me with any questions. Happy visualizing!



# Housekeeping

- Look through the data sets and see if you can find any that looks interesting to experiment with (I do give options in your Skills Assessment if you cannot find your own in our Spatial Data Resources).
- We will work in Google's Flourish. Here is the Skills Assessment Assignment:
  - <http://gebeasley.org/DH390/flourish-skills-assessment/>
- Don't forget to continue with your other maps, as well as make sure your readings are done, so that you can incorporate them in your final blog post.

