



# **BIG DIVE**

## **DATA SCIENCE & ANALYTICS**

Organized by



Designed for



In collaboration with



ISI Foundation

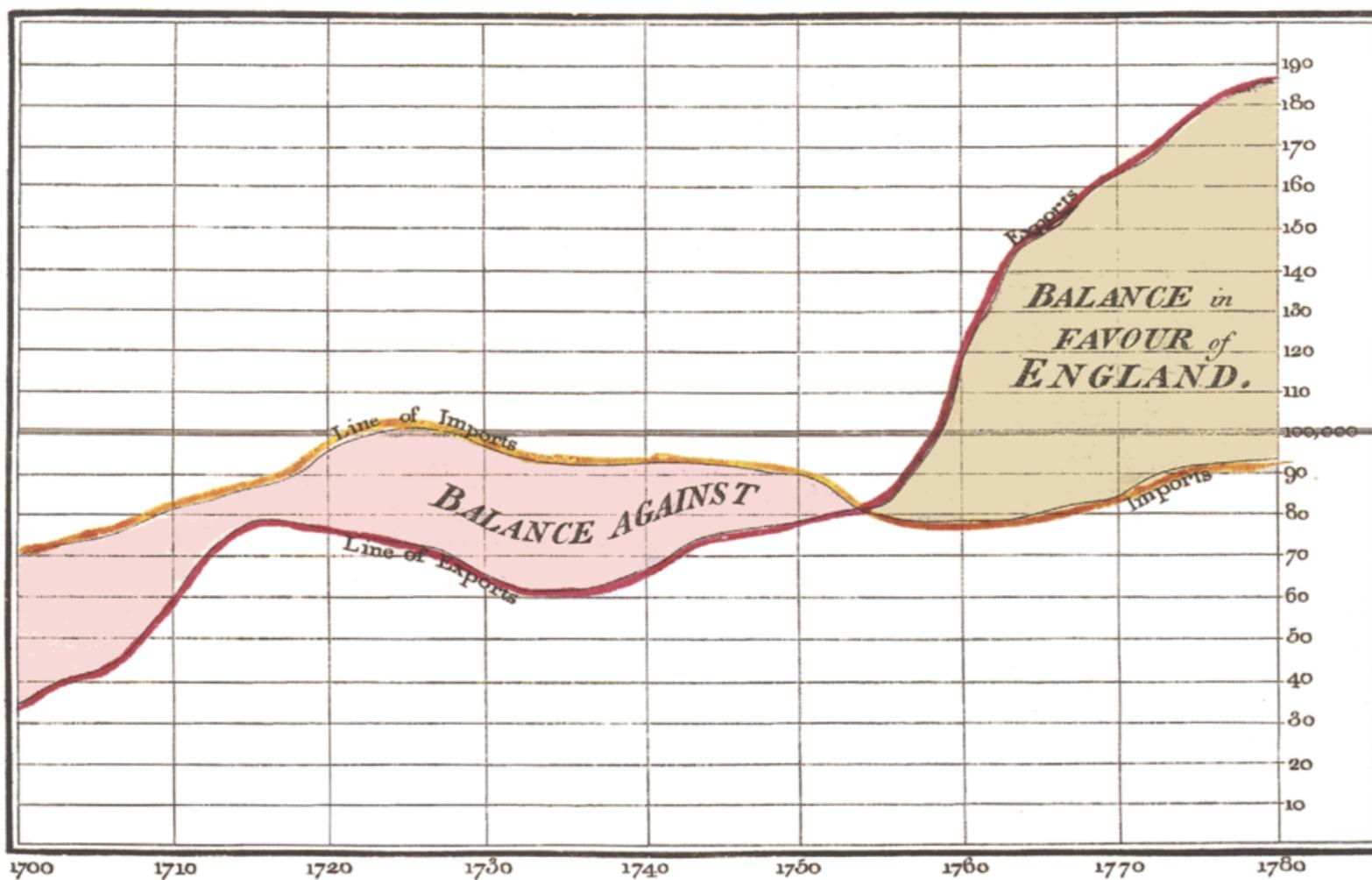


	A	B	C
1	Query	Searches	Volume
3	pga	5244	11.08230719
4	pga.com	2583	6.610499028
5	freegolfinfo	64	4.147764096
6	golf tips	1884	3.046014258
7	golf	176386	1.62022035
8	pga tour	4142	1.360985094
9	michigan football	5105	0.777705768
10	golf swing	1596	0.777705768
11	pga golf	1406	0.712896954
12	pga championship	504	0.583279326
13	mgoblue	311	0.583279326
14	putting tips	133	0.518470512
15	golf shank	22	0.453661698
16	michigan wolverines	2587	0.453661698
17	golf lessons	463	0.453661698
18	us open	6077	0.388852884
19	online golf tips	8	0.388852884
20	university of michigan	4948	0.32404407
21	golf schools	1657	0.32404407
22	how to play golf	394	0.32404407
23	free video golf lessons	5	0.32404407
25	stratton	976	0.259235256
26	swing plane	15	0.259235256

7	2	5	2	8	3	1	7	4	0	9	7	9	3	5	2	1	7	2	5	6	6	4
4	3	2	6	1	6	8	1	9	1	4	2	5	7	2	1	6	1	4	6	1	6	9
3	6	2	6	3	8	0	5	9	2	6	3	6	5	2	1	8	3	6	2	6	3	6
8	4	7	2	2	6	8	2	1	9	6	4	5	3	2	9	6	0	4	0	4	5	3
7	5	2	4	1	7	3	4	6	8	3	9	2	4	9	6	4	2	8	5	2	1	8
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6	8	3	4	1	8	5	8	5	8	6	3	9	4	7	5	9	2	5	8	4	6	8
5	8	4	2	8	9	5	0	7	8	2	6	4	7	3	6	9	5	8	5	2	4	7

7	2	5	2	8	<b>3</b>	1	7	4	0	9	7	9	<b>3</b>	5	2	1	7	2	5	6	6	4
4	<b>3</b>	2	6	1	6	8	1	9	1	4	2	5	7	2	1	6	1	4	6	1	6	9
<b>3</b>	6	2	6	<b>3</b>	8	0	5	9	2	6	<b>3</b>	6	5	2	1	8	<b>3</b>	6	2	6	<b>3</b>	6
8	4	7	2	2	6	8	2	1	9	6	4	5	<b>3</b>	2	9	6	0	4	0	4	5	<b>3</b>
7	5	2	4	1	7	<b>3</b>	4	6	8	<b>3</b>	9	2	4	9	6	4	2	8	5	2	1	8
2	8	<b>3</b>	6	1	<b>3</b>	8	0	9	5	7	4	2	4	7	2	9	7	<b>3</b>	6	<b>3</b>	6	<b>3</b>
6	8	<b>3</b>	4	1	8	5	8	5	8	6	<b>3</b>	9	4	7	5	9	2	5	8	4	6	8
5	8	4	2	8	9	5	0	7	8	2	6	4	7	<b>3</b>	6	9	5	8	5	2	4	7

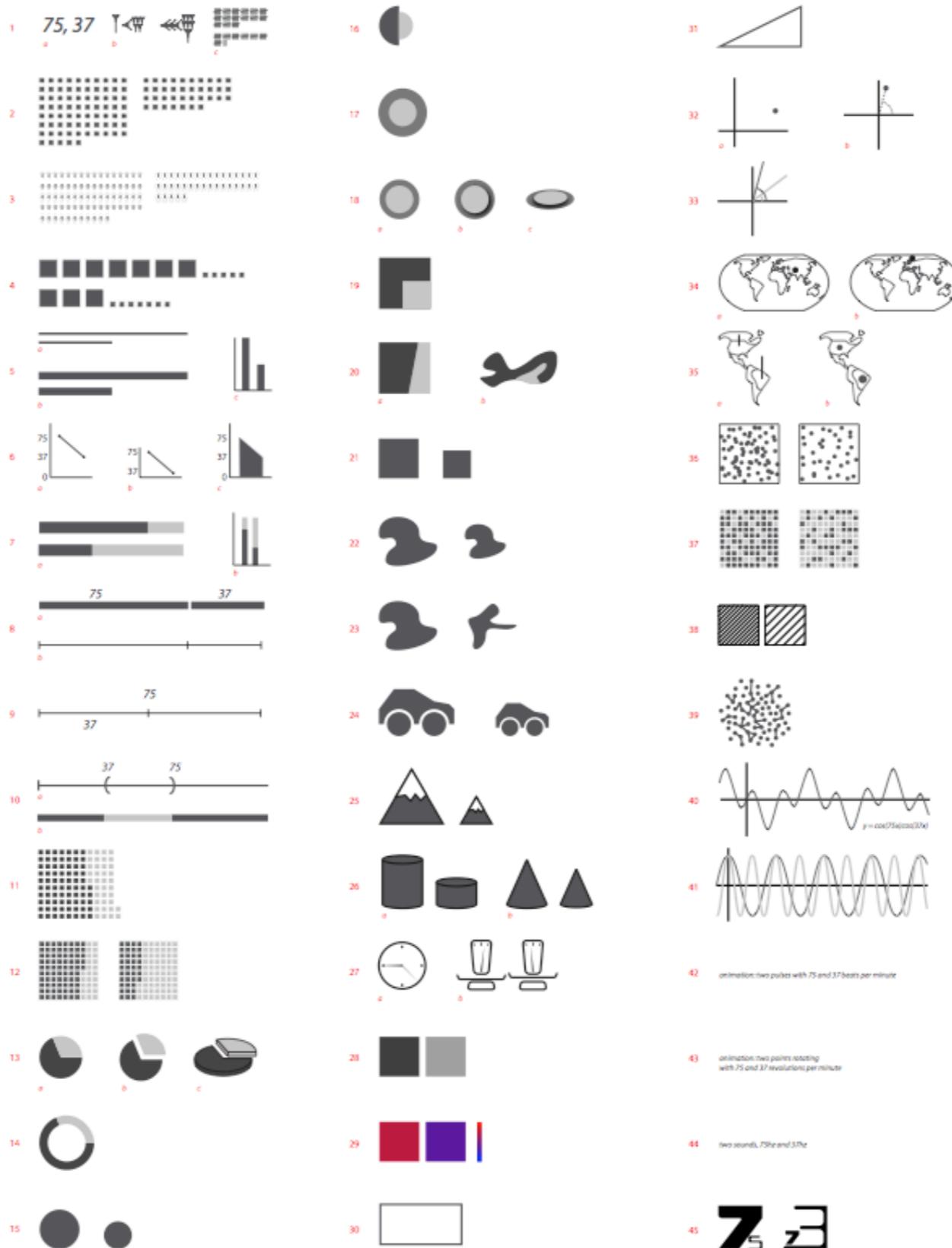
Exports and Imports to and from DENMARK & NORWAY from 1700 to 1780.



The Bottom line is divided into Years, the Right hand line into £10,000 each.  
Published as the Act directs, 1st May 1786, by W<sup>m</sup> Playfair  
Neale sculpt 352, Strand, London.

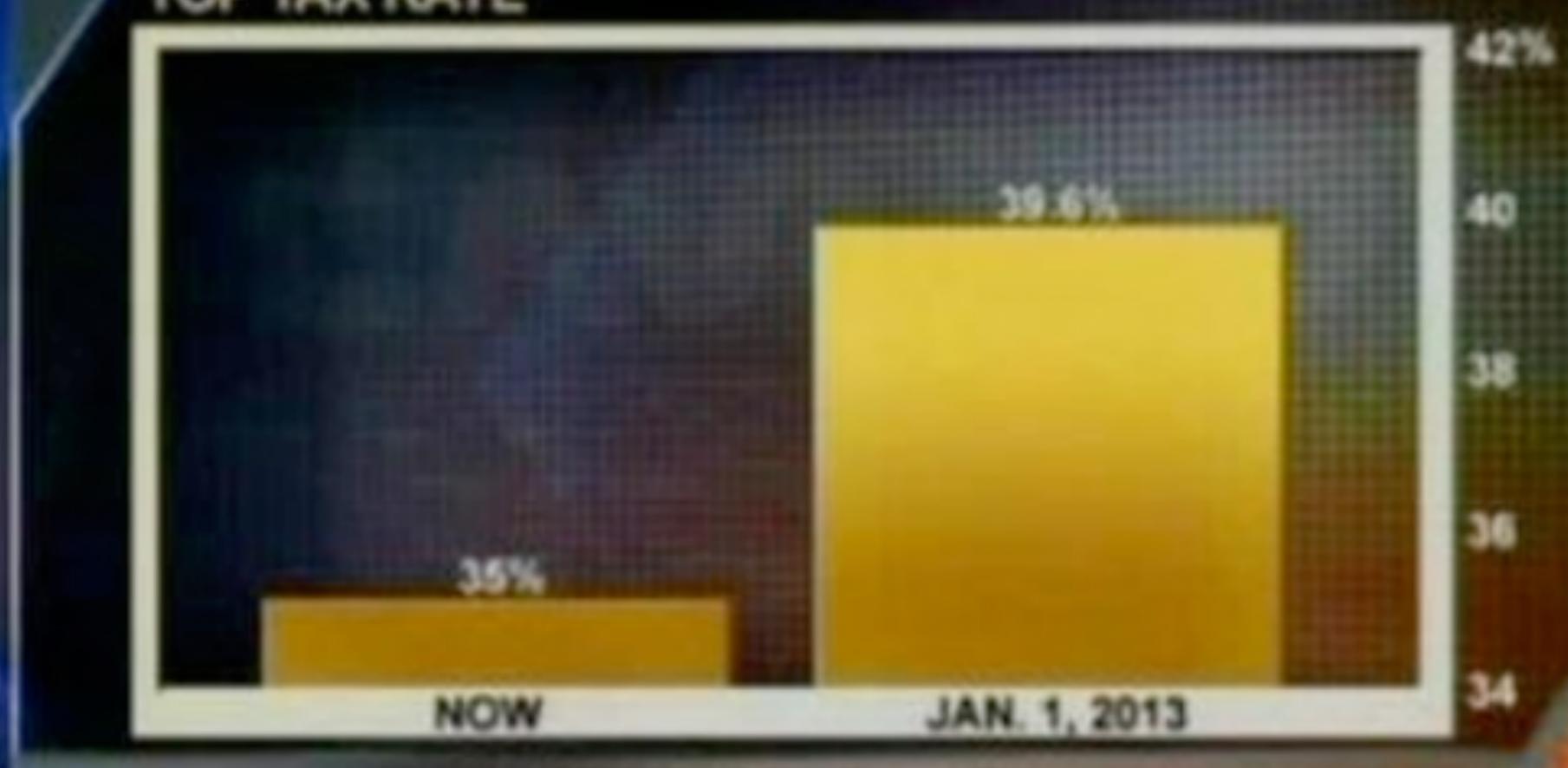
WILLIAM PLAYFAIR | EXPORTS AND IMPORTS OF DENMARK AND NORWAY  
(1786)

# 75, 37 multiple ways to communicate two quantities



# IF BUSH TAX CUTS EXPIRE

TOP TAX RATE



8:01 p. ET

**FOX**  
BUSINESS

TOP STORIES

TECHNOLOGY

CONSUMER

VITH THE JUSTICE DEPARTMENT AND AQUIRES FULL T

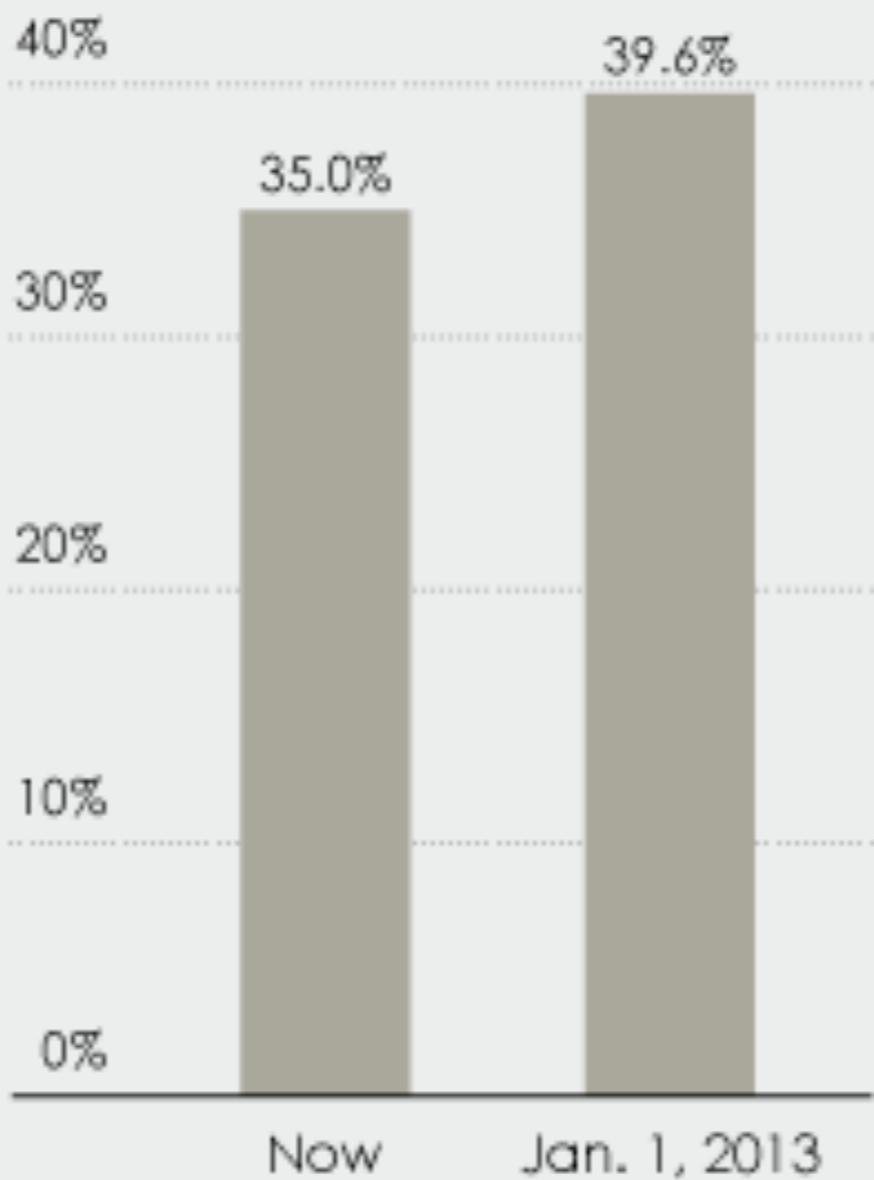
DOW 13008.68 + 64.33

S&P 1379.32 + 5.98

NASDAQ 2939.52 + 6.32

## If Bush tax cuts expire...

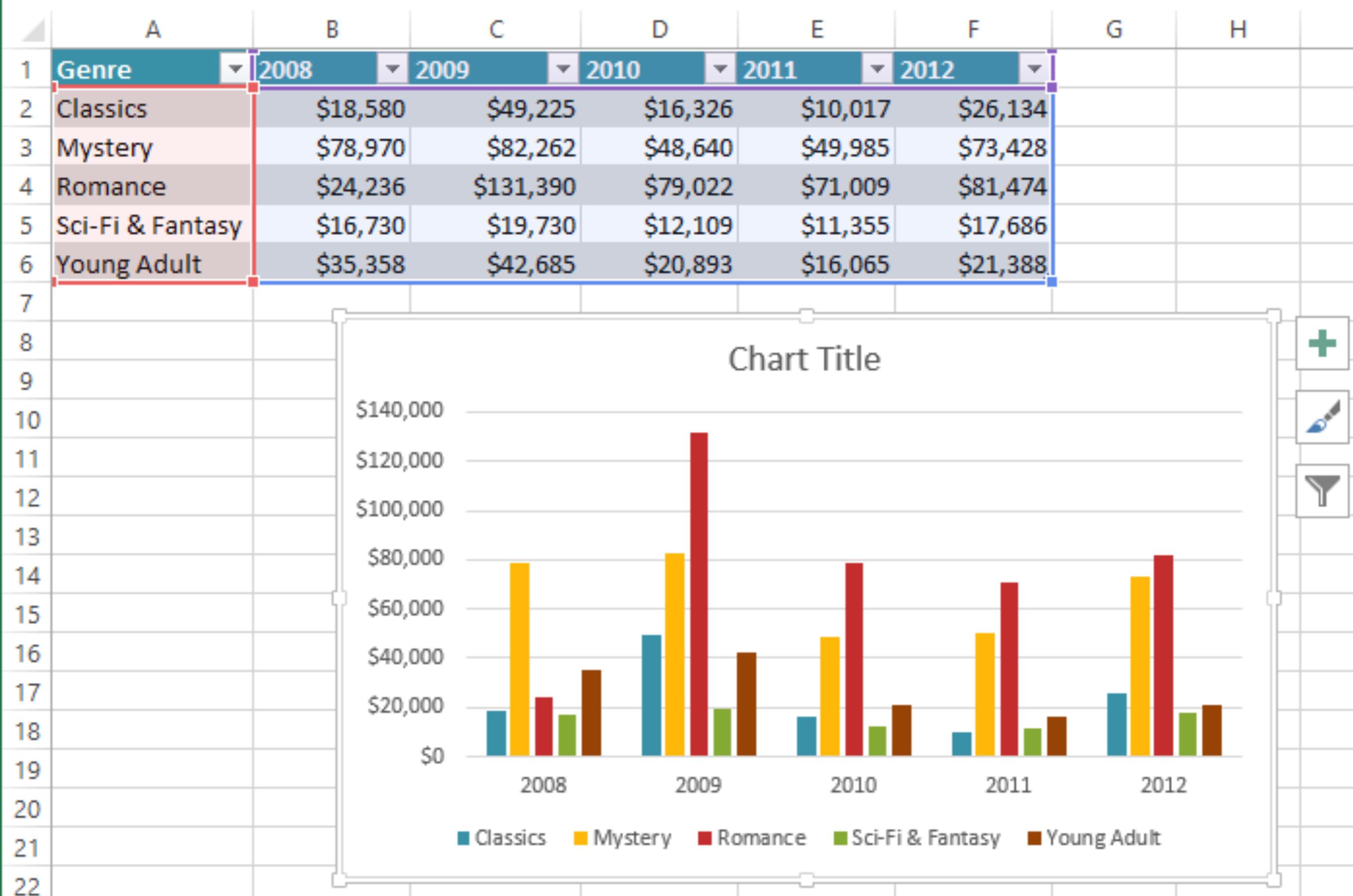
Top tax rate



Average Annual Global Temperature in Fahrenheit  
1880-2015

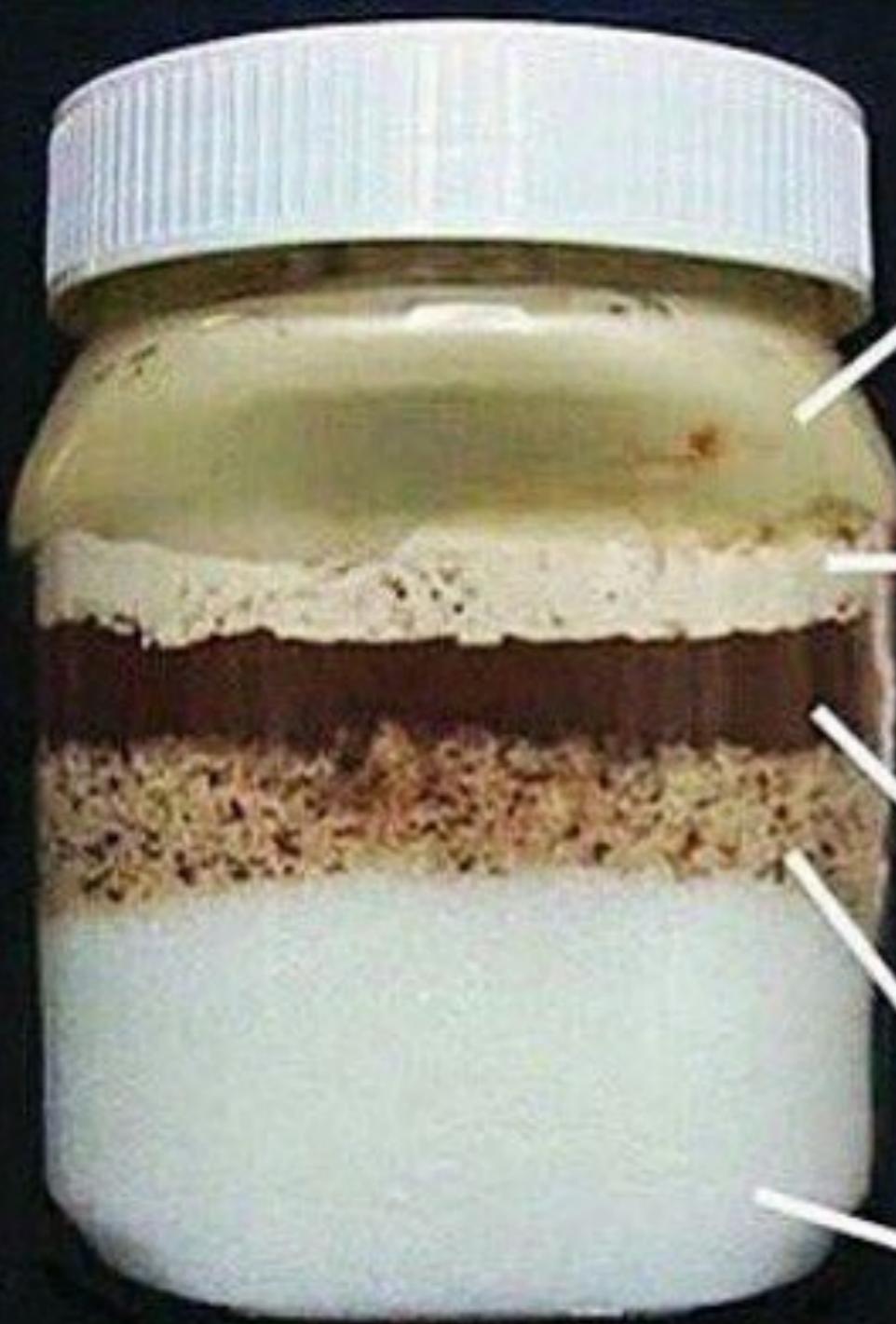


# SURVEY









palm oil

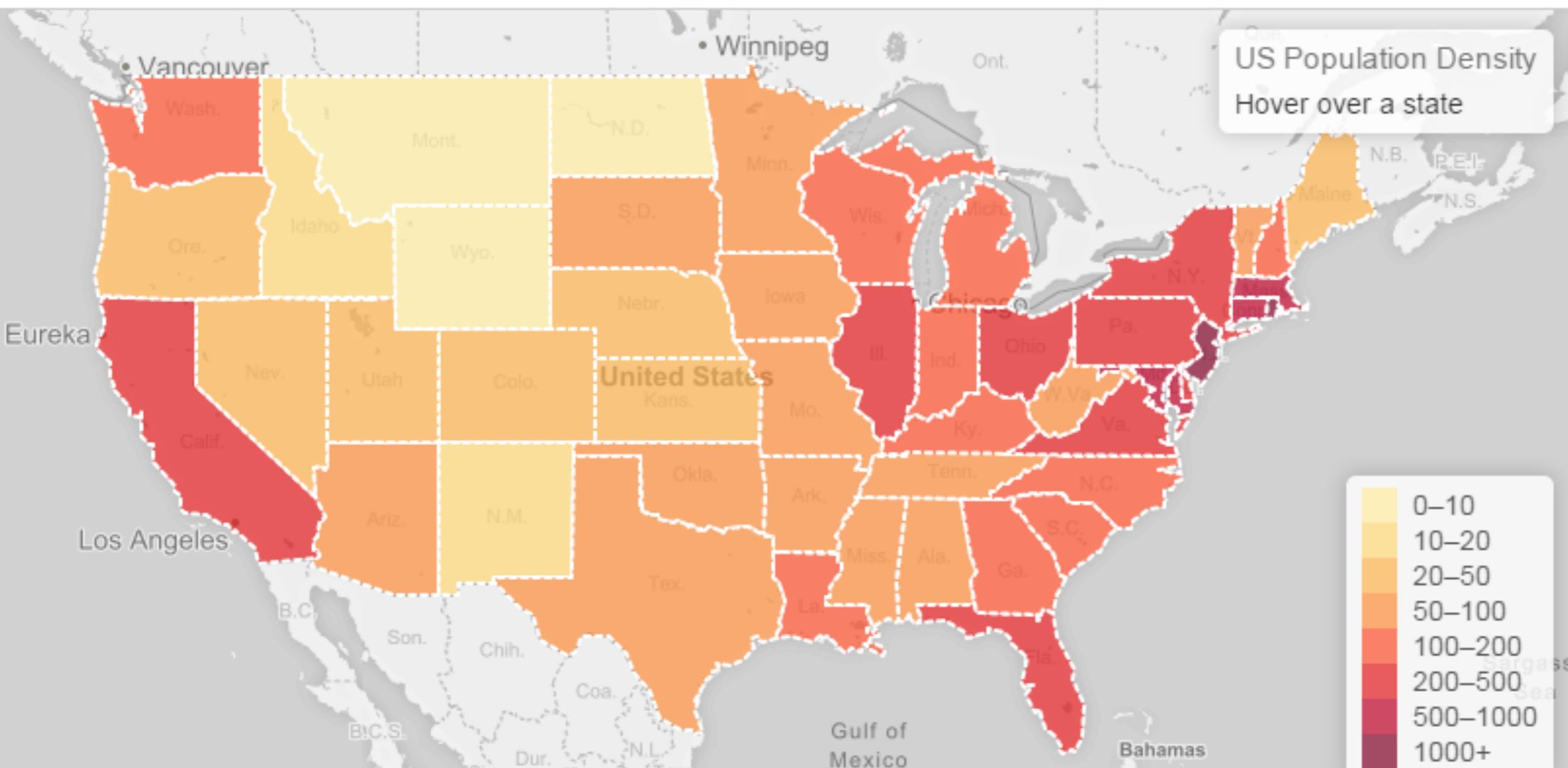
skim milk  
powder

cocoa

hazelnuts

sugar

US Population Density  
Hover over a state



Leaflet | Map data © OpenStreetMap contributors, CC-BY-SA, Imagery © Mapbox, Population data © US Census Bureau

All Spending

Types of Spending

Changes

Department Totals

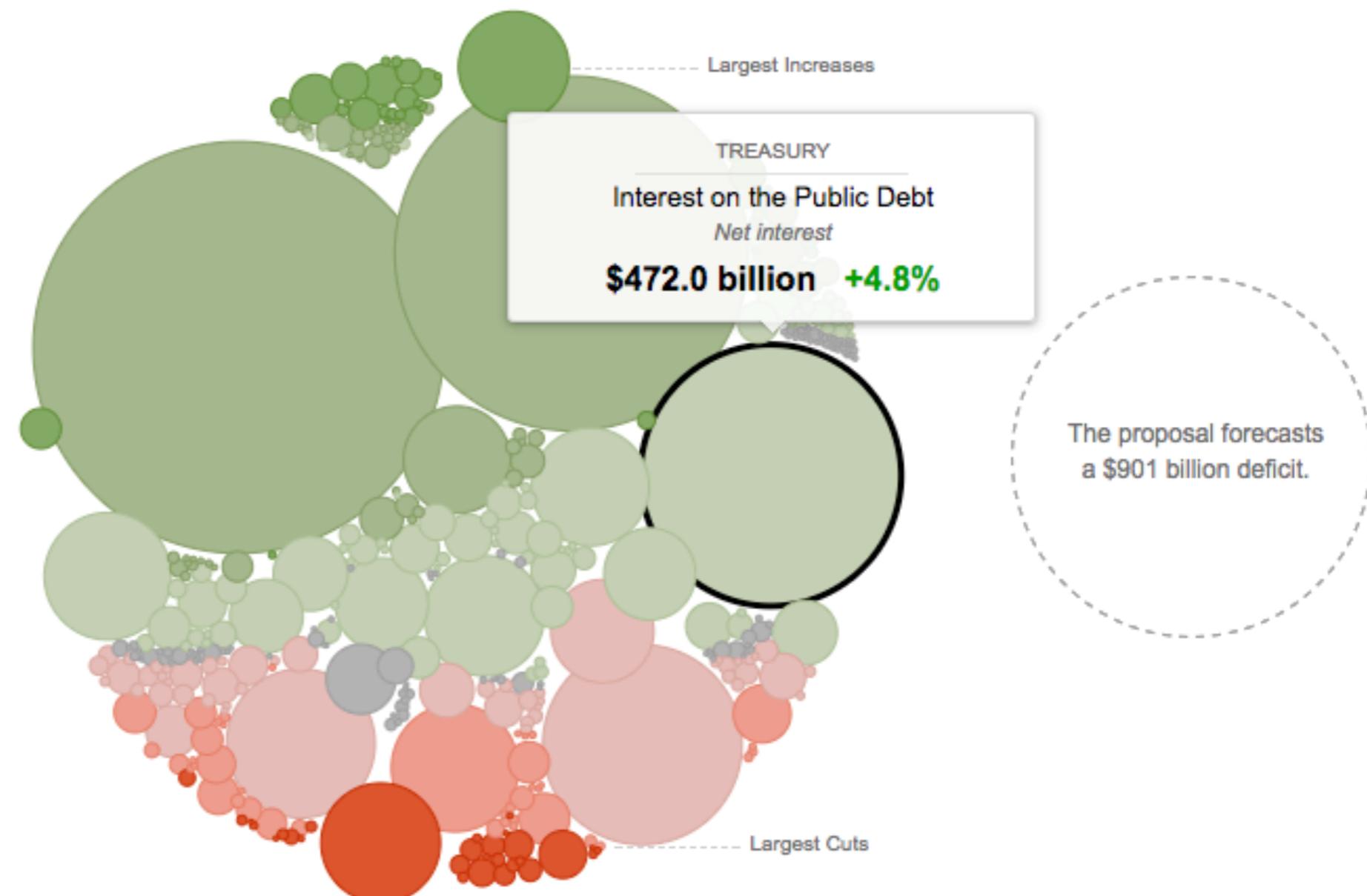
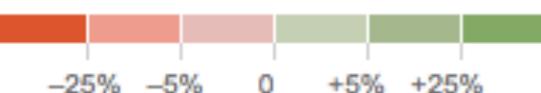
## How \$3.7 Trillion Is Spent

Mr. Obama's budget proposal includes \$3.7 trillion in spending in 2013, and forecasts a \$901 billion deficit.

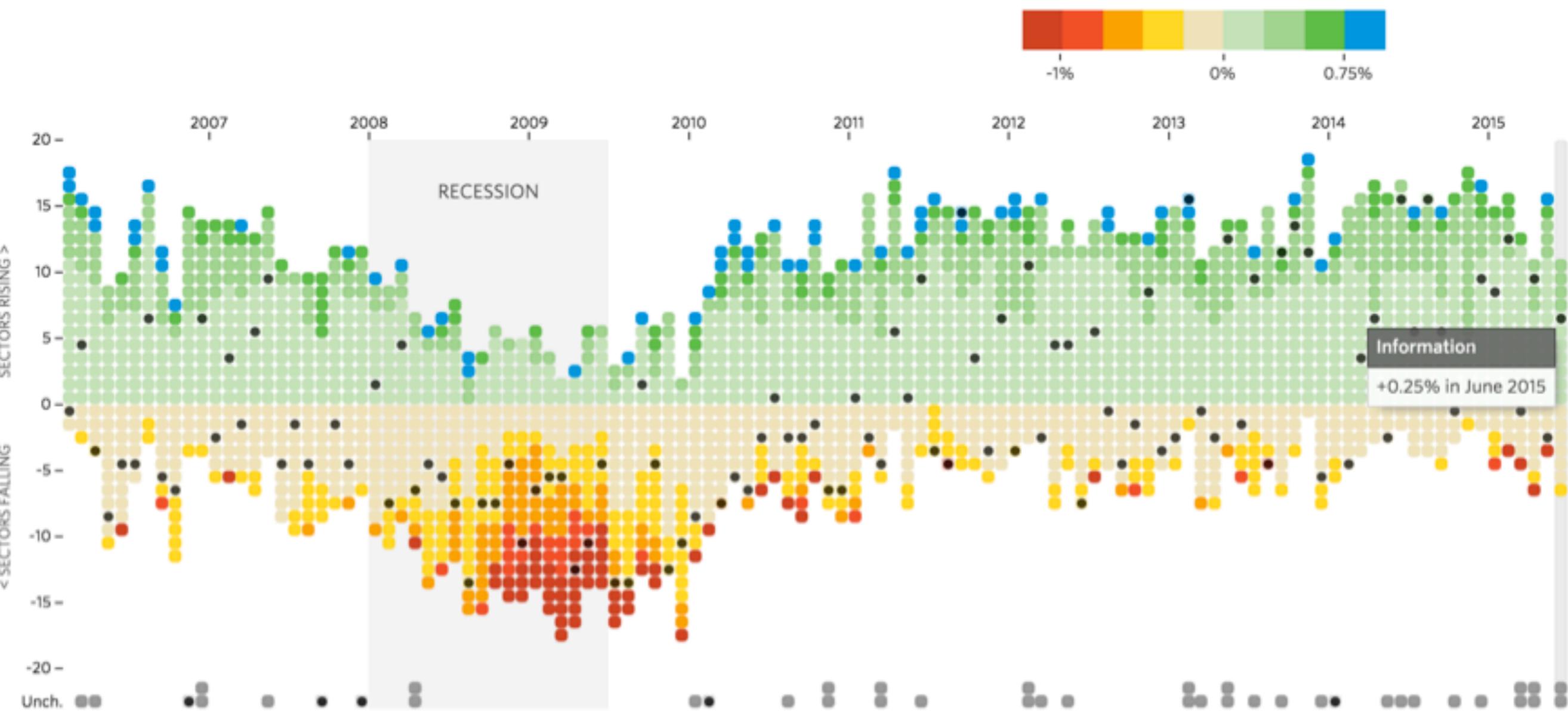
Circles are sized according to the proposed spending.



Color shows amount of cut or increase from 2012.







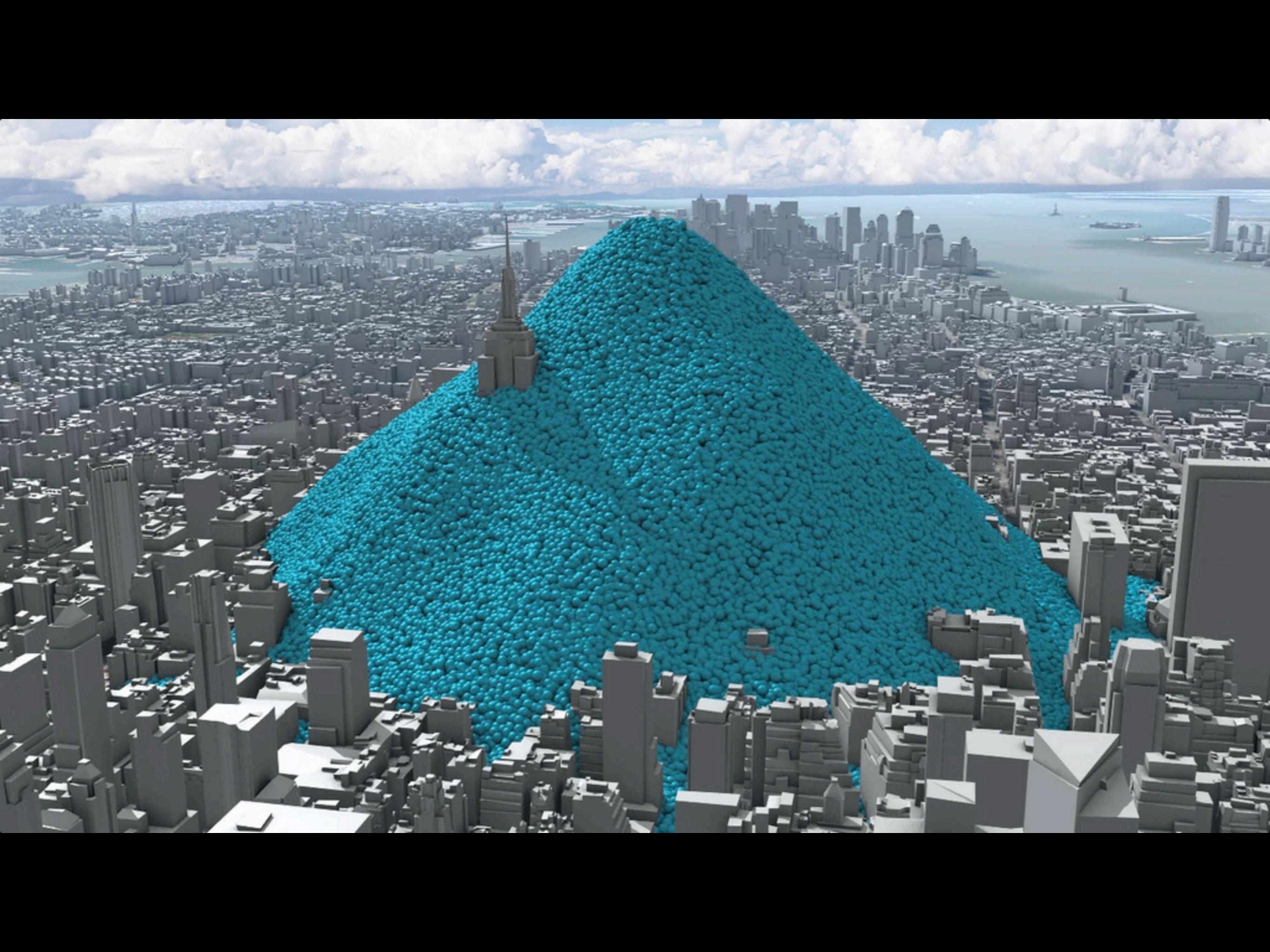


Pie I have eaten

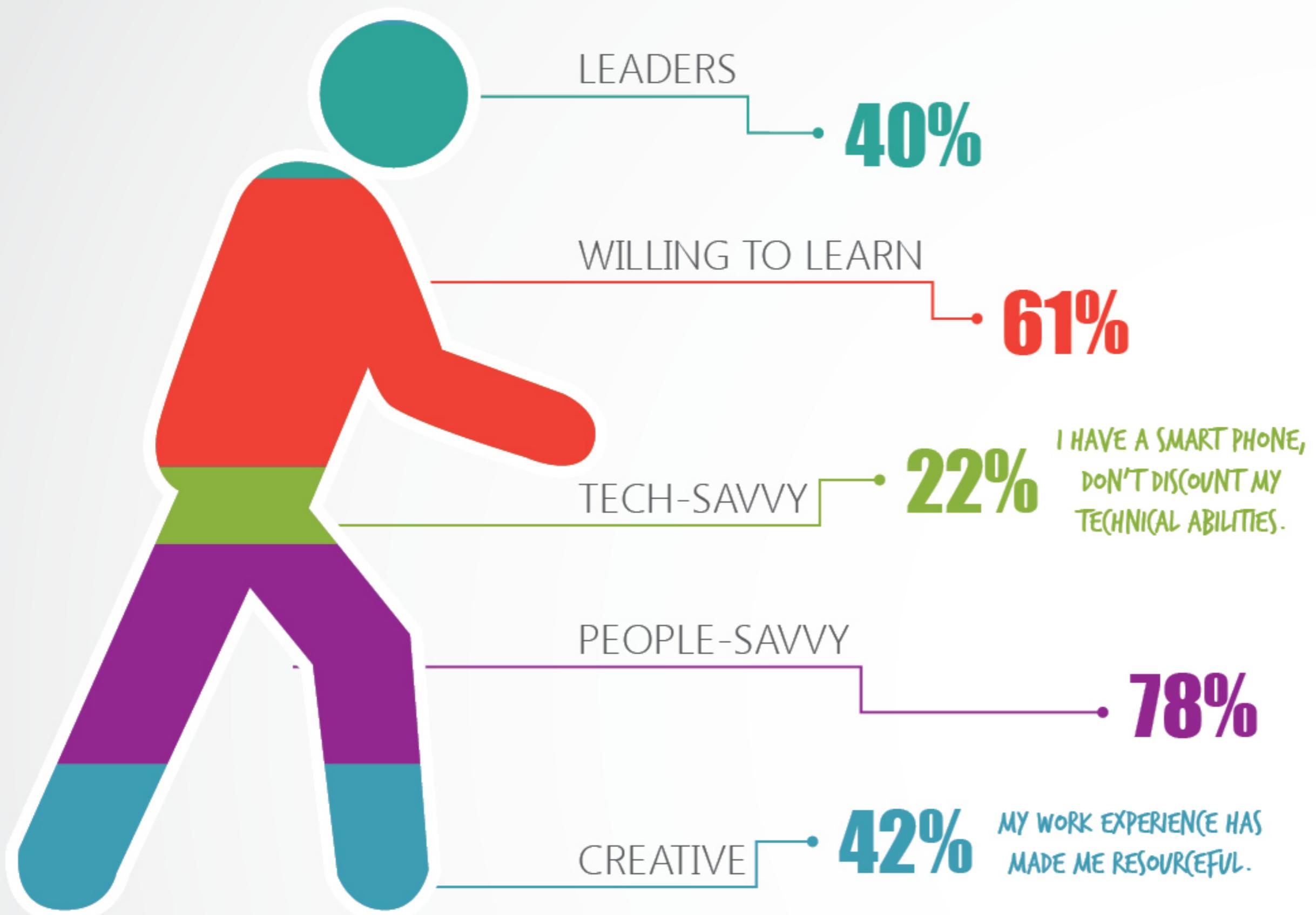


Pie I have not  
yet eaten



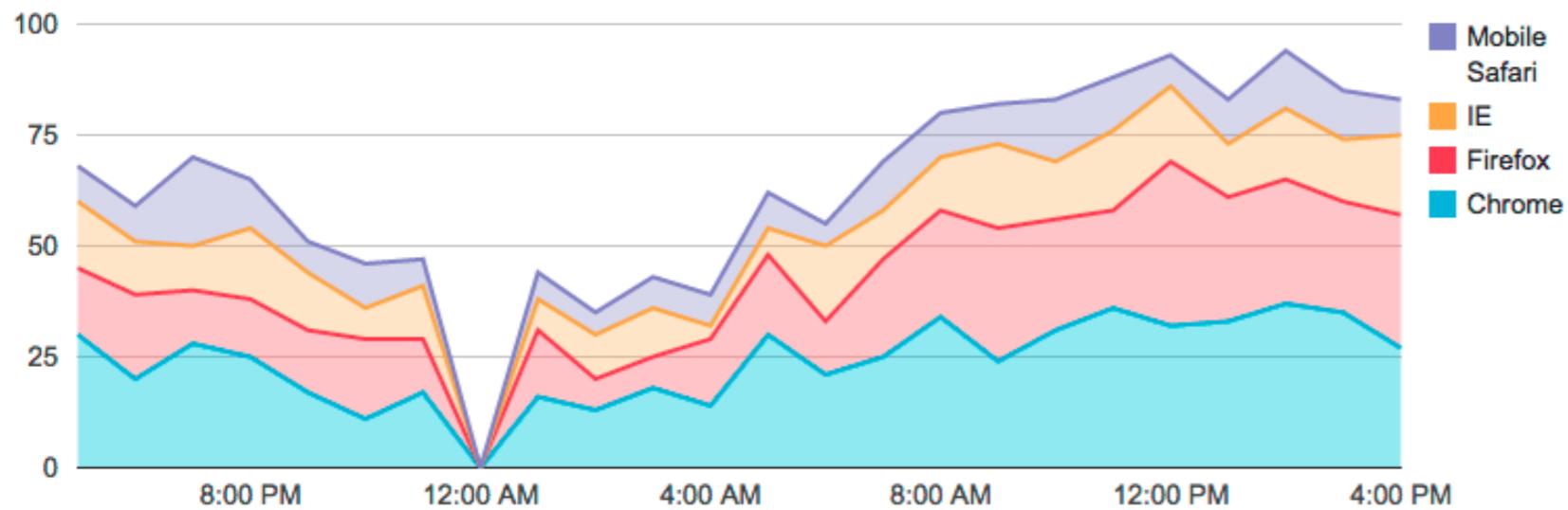


# HOW BABY BOOMERS DESCRIBE THEMSELVES



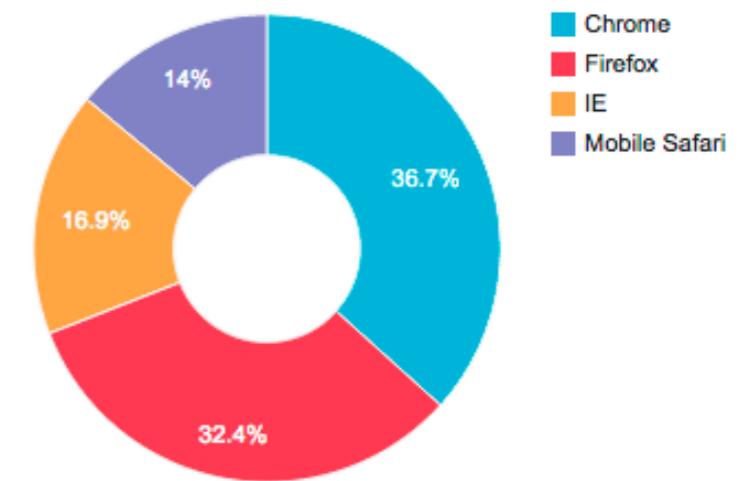
Dashboard Starter UI Home Team Source Chat Support

Pageviews by browser (past 24 hours)



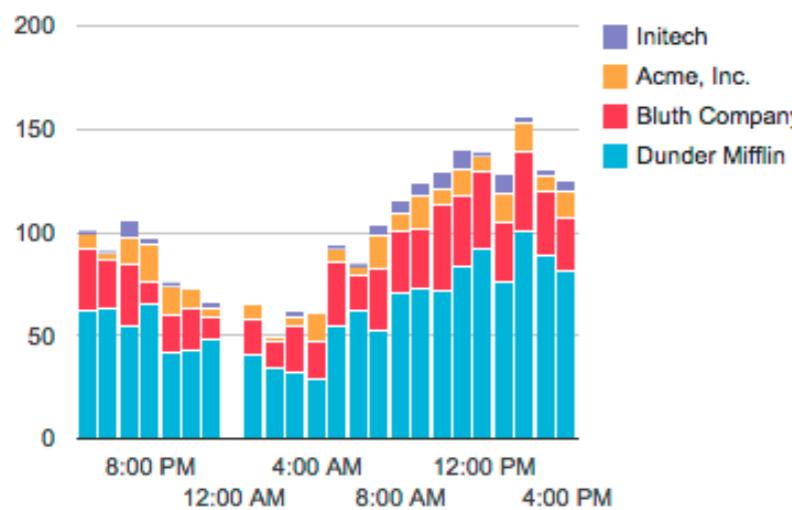
This is a sample text region to describe this chart.

Pageviews by browser (past 5 days)

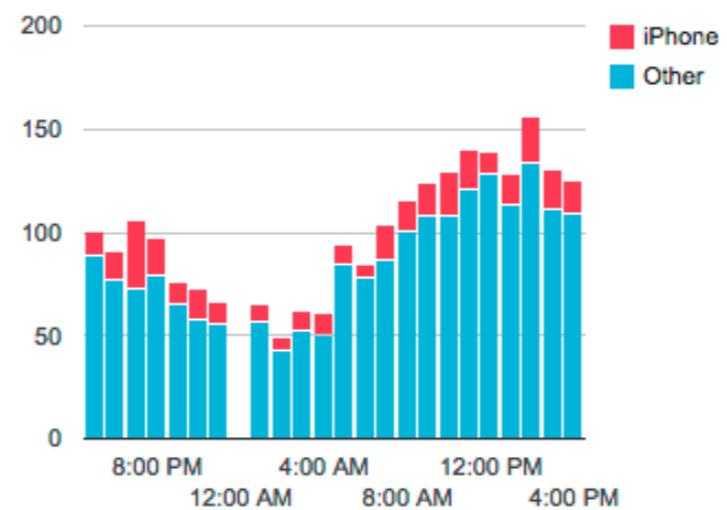


Notes go down here

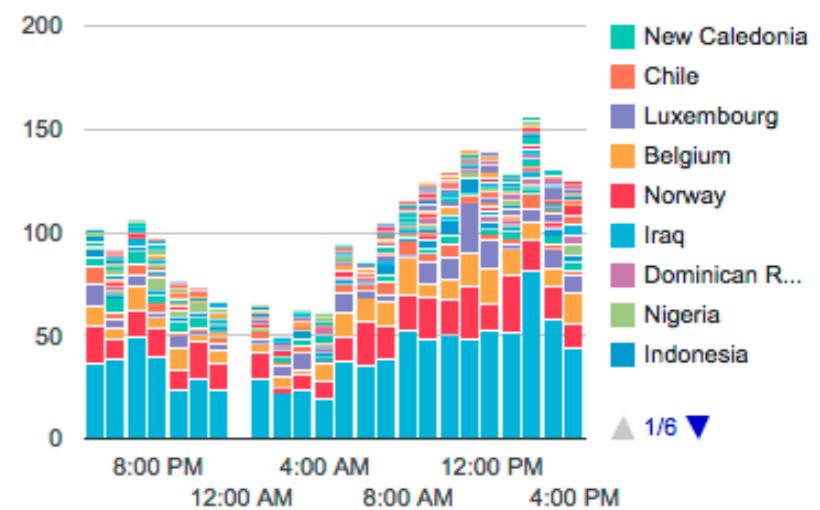
Impressions by advertiser



Impressions by device



Impressions by country



# Visualisation

# DATA

# • Art Illustrate Figure

# Representation Show

# SPACE

taken by 60 people



# TOOLS

# EXCEL

Copy of Marketing Budget-labrat - Microsoft Excel Preview

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW TEAM Sean ? X

Cut Paste Copy Format Painter

Font Alignment Number Styles Cells Editing

A2 Date

Transactions

Date	amt	Name	Dept	cod	Department	Transaction code
11/2/11	\$1,300.00	John	Ads	Advertising	801010	
11/3/11	\$1,830.00	Jenny	Evs	Events	802100	
11/4/11	\$600.00	Bill	Dmg	Digital Marketing	804020	
11/7/11	\$1,800.00	Sally	Pro	Promotions	807800	
11/8/11	\$2,730.00	Paul	Ads	Advertising	801010	
11/8/11	\$1,750.00	Paul	Evs	Events	802100	
11/9/11	\$1,200.00	John	Dmg	Digital Marketing	804020	
11/10/11	\$3,500.00	John	Prs	Public Relations		
11/11/11	\$2,500.00	Jenny	Pro	Promotions		
11/14/11	\$1,500.00	Bill	Evs	Events		
11/15/11	\$800.00	Sally	Ads	Advertising		
11/17/11	\$2,370.00	John	Evs	Events		
11/18/11	\$700.00	Bill	Dmg	Digital Marketing		
11/18/11	\$1,800.00	Paul	Prs	Public Relations		
11/21/11	\$550.00	Bill	Evs	Events		
11/21/11	\$1,420.00	Bill	Pro	Promotions		
11/22/11	\$2,210.00	Jenny	Ad	Advertising		
11/23/11	\$920.00	Sally	Dmg	Digital Marketing		
11/23/11	\$1,680.00	Sally	Prs	Public Relations		
11/24/11	\$3,500.00	Sally	Prs	Public Relations		
11/25/11	\$1,400.00	Jenny	Pro	Promotions		
11/28/11	\$1,800.00	John	Evs	Events		
11/29/11	\$1,300.00	Bill	Ad	Advertising		
11/30/11	\$510.00	Sally	Dmg	Digital Marketing		

Sum of amt by Name

FORMATTING CHARTS TOTALS TABLES SPARKLINES

Line Clustered Column Clustered Bar Stacked Area More Charts

Recommended Charts help you visualize data.

AVERAGE: 3/14/58 COUNT: 125 SUM: 9/21/93

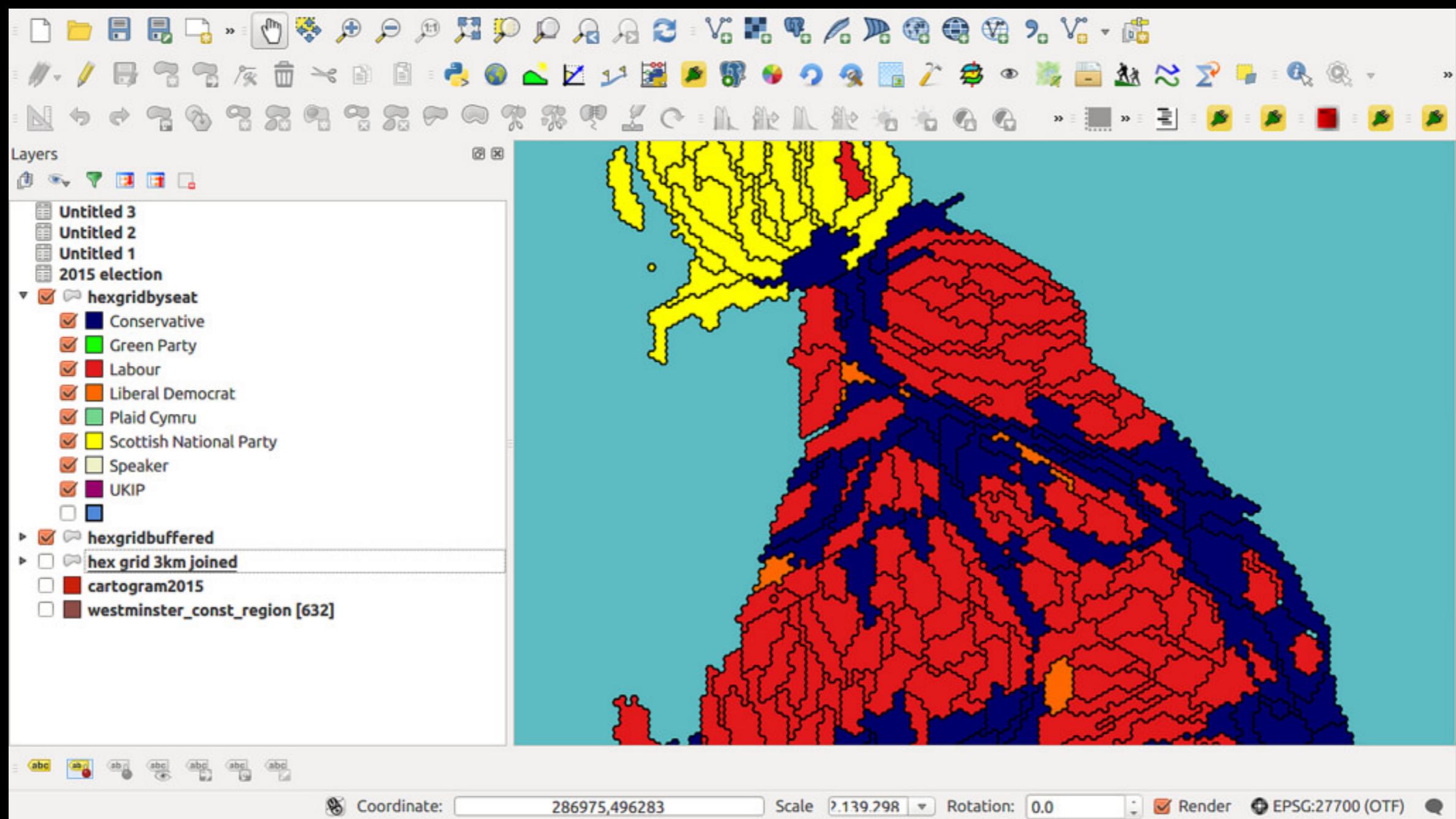
READY

10:34 PM 7/13/2012

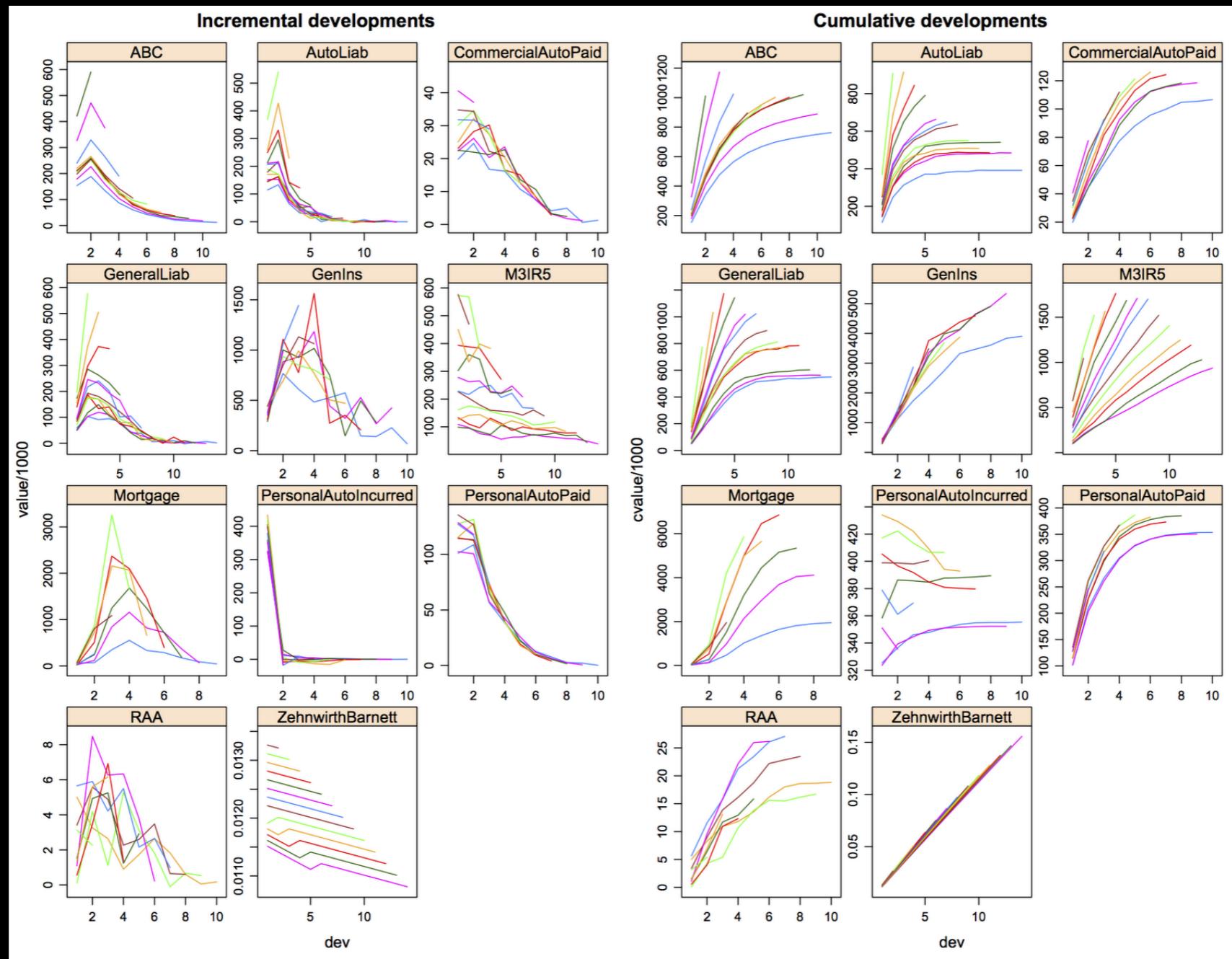
# GEPHI



# QGIS



# R



# REFINE

Google refine Cleaning BAA Data Permalink Text transform on 35384 cells in column AgeOnRaceDay:  
grel:value.toNumber() Undo

Facet / Filter Undo / Redo 2

Refresh Reset All Remove All

AgeOnRaceDay change reset

18.00 — 84.00

35384 rows

Show as: rows records Show: 5 10 25 50 rows

		FirstName	GenderCode	AgeOnRaceDay	City	State
1.	Mariann	F		69	Copenhagen	
2.	Gina	F		37	Lisbon	ND
3.	Keith	M		55	Ann Arbor	MI
4.	Mark	M		35	Sagamore Beach	MA
5.	Allison	F		38	Reading	MA
6.	Jocelyne	F		60	Tabanac	
7.	David	M		42	Pembroke	MA
8.	Susan	F		41	St. John's	NL
9.	John	M		59	Yorktown Heights	NY
10.	Michael	M		24	Boston	MA

# TABLEAU



# POWER BI

Microsoft | Power BI Products Solutions Partners Learn Sign in Sign up free

Go from data to insights in minutes.  
Any data, any way, anywhere. And all in one view.

START FREE >

The image displays three electronic devices (a laptop, a tablet, and a smartphone) arranged in a staggered, overlapping fashion against a yellow background. Each device screen shows a different view of a Power BI dashboard. The dashboard features various data visualizations including bar charts, a pie chart, a map, and a scatter plot, all related to executive metrics like revenue, visitors, and user behavior. The top navigation bar includes links for Microsoft, Power BI, Products, Solutions, Partners, Learn, Sign in, and Sign up free. A central call-to-action button says "START FREE >".

# QLIK

The screenshot shows the Qlik homepage. At the top, there is a navigation bar with links for Community, Blog, USA (change), Contact, Login, and Search. Below the navigation bar is the Qlik logo and a menu with links for Products, Solutions, Services, Partners, Company, and a green 'TRY OR BUY' button. The main content area features a large banner with the text 'Faster answers. More insights. Better outcomes.' Overlaid on the banner is a description: 'Go ahead, ask any question. The Qlik data analytics platform and patented Associative engine takes you beyond the limits of query-based BI tools. So ask away: your answers are waiting.' A green 'Watch Video' button and a white 'Try it Free' button are visible on the banner. On the left side of the banner, there is a blue vertical bar with the text 'CHAT LIVE'. A yellow circle highlights the 'CHAT LIVE' bar. At the bottom of the page, there is a call-to-action for the '2017 Visualize Your World Data Analytics Tour' with a calendar icon and a link to 'https://community.qlik.com/welcome'.

Community Blog

USA (change) Contact Login Search

Qlik TRY OR BUY

Faster answers. More insights.  
Better outcomes.

Go ahead, ask any question. The Qlik data analytics platform and patented Associative engine takes you beyond the limits of query-based BI tools. So ask away: your answers are waiting.

Watch Video Try it Free

CHAT LIVE

Join us for the 2017 Visualize Your World Data Analytics Tour

<https://community.qlik.com/welcome>



data visualization software



All Images Videos News Shopping More

Settings Tools

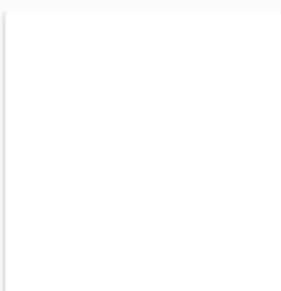
Software > data > visualization



D3.js  
BSD licenses



Power BI



Gephi  
GNU Gener...



Instantatlas



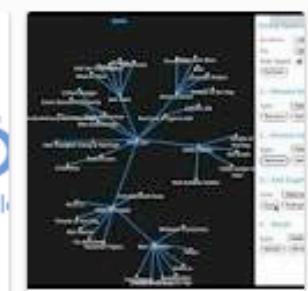
JMP  
Proprietary s...



SAP  
BusinessObj...  
Shareware



CartoDB



JavaScript  
InfoVis Toolkit  
BSD licenses



## Data Visualization Guide - sisense.com

Ad [www.sisense.com/Visualization-software](http://www.sisense.com/Visualization-software) ▾

Do You Need a Full Stack Solution? Find Out Now - Read Our Free Guide!

Analytics in one Agile BI · No External Tools Needed · Crunching Complex Data

[Data Visualization Guide](#)

[1-on-1 Demo](#)

[Pricing Plans](#)

[Build Visual Dashboards](#)

## TIBCO® Spotfire DataViz - Persuasive Data Visualizations - tibco.com

Ad [spotfire.tibco.com/](http://spotfire.tibco.com/) ▾

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Ranked Best-in-Class · Scarica Spotfire · Demo Spotfire · Contattaci ora · BI & Analytics

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Ad [www.capterra.com/Data-Management/Free-List](http://www.capterra.com/Data-Management/Free-List) ▾



# Data-Driven Documents



**DATAVIZ THESE DAYS**

## Monthly Births In Wayne County, Michigan



Nine months after the attack, Oklahoma City was looking at their lowest number of January births in all 21 years.

## Bankruptcy Babies?

Since having children is an inherently expensive commitment, it's possible that an economic downturn in your city could make you re-evaluate your choice to reproduce. For instance, in 2013, the city of Detroit filed for bankruptcy.

CK8 doesn't seem to be a dramatic dip in births immediately following the formal bankruptcy in Detroit. However, annual births in the city have declined about 30% since 1995, suggesting that economic turmoil may have a more long-term effect. A study of the most recent recession found a "consistent negative impact of unemployment on fertility rates" with "the greatest impact found at younger ages," (which can easily adjust family planning).





But modern computers make calculating tax brackets very easy. It's deductions and exemptions that make doing your taxes complicated.

<https://youtu.be/ONwmttF2byI>

P

An Interactive Visualization of  
Every Line in Hamilton  
<https://dubc.tesu.co>

Scroll

**Out of Sight, Out of Mind.**

ATTACKS VICTIMS NEWS INFO SHARE

COLLECTED 190  
OPENED 534

REPORTED 57  
OPENED

ESTIMATED TOTAL VICTIMS 3341

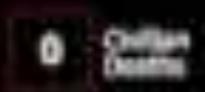
IN|OUT

<https://youtu.be/GTpJWcrcS5I>

Sep 23, 2013



0  
Civilian  
Deaths



0  
Civilian  
Injuries



6  
Other  
Deaths

6 of 15 tweets this month

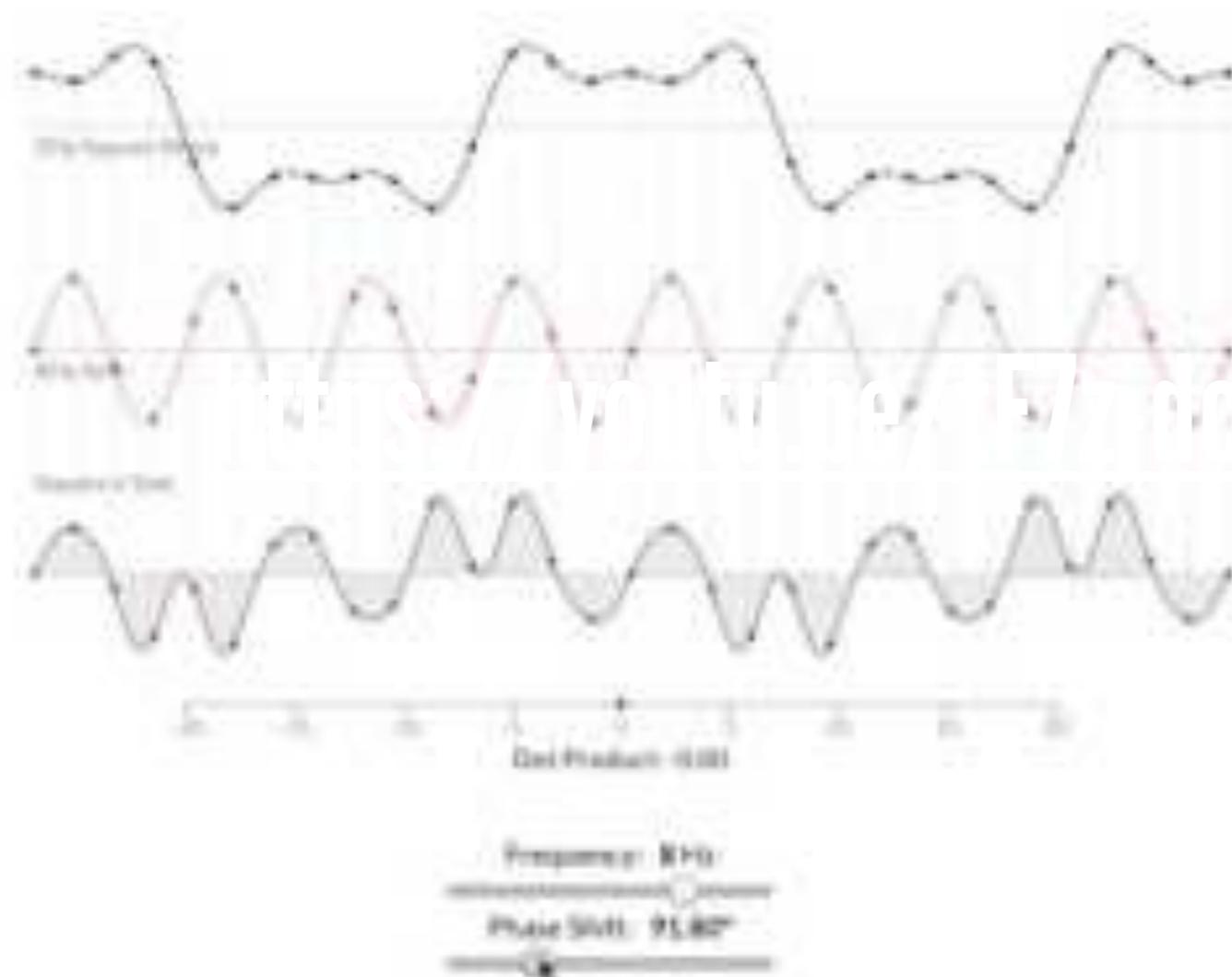
Where Retweeted

14 alleged militants killed and 32 injured in attack on bus and vehicle, Wazirabad, North Waziristan.

RECENT HOME ABOUT BROWNS

and measure tones with different frequencies. If one frequency is present in the tone, we know that that frequency is present in the "recipe". A basic schematic for this detector is shown in Figure 2. Use the Frequency slider to adjust the target frequency of the detector.

Figure 2: Calculating the Dot Product of a Source Wave and Target of Varying Frequencies  
A Computerized Version of a "Detector"



As you play with the frequency control, you'll notice that the detector will require the presence of sinusoidal components at 2, 4, and 8 Hz (the 16, 32, and 64 Hz components of the target) to obtain the maximum of the detector's output.



<https://youtu.be/02HLdJDA13g>

AVOLIOST  
1848 1848 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858

## OLD FASHION

The oldest members of the Italian Parliament ever

FIND YOUR FAVORITE  
PARLIAMENT MEMBER

92

ORLANDO  
VITTORIO  
EMANUELE  
1811 - 1861

91

CAPORALI  
RAFFAELE  
1866 - 1867

92

BOGGIANO PICO  
ANTONIO  
1811 - 1861

95

BERTONE  
GIOVANNI  
BATTISTA  
1811 - 1861

87

GULLO FAUSTO  
1811 - 1871

95

LAURO ACHILLE  
1867 - 1882

94

CROLLALANZA  
ARALDO

87

MALAGGI  
GIOVANNI



四

## By Status

**Wise** *Reffle and Otti* **Block** *Lukkes* **Pelt** *Qua* **Frost** *Schoop* **Burn**  
**twifflw** *Chew* *lory* *Vape* *Tome* *Nas Nas* *Shutter* *Woj* *Triggen*  
**Skook** *joli* *Rosetta* *Woke* *Holmesian* *Shit* *Exaligning* *Bugy* *Gru*  
**Dark Matter** *Vexing* *Brash* *Invention* *Steady* *Quash* *Worr*

Zero Search Interest  Paid Search Interest



# Instead of a common custom api:

```
YetAnotherLibrary.circle(0, 0, 50);
```

# D3.js offers an abstract api:

```
D3.append('circle')
  .attr('cx', 0)
  .attr('cy', 0)
  .attr('r', 50)
```

# Gallery

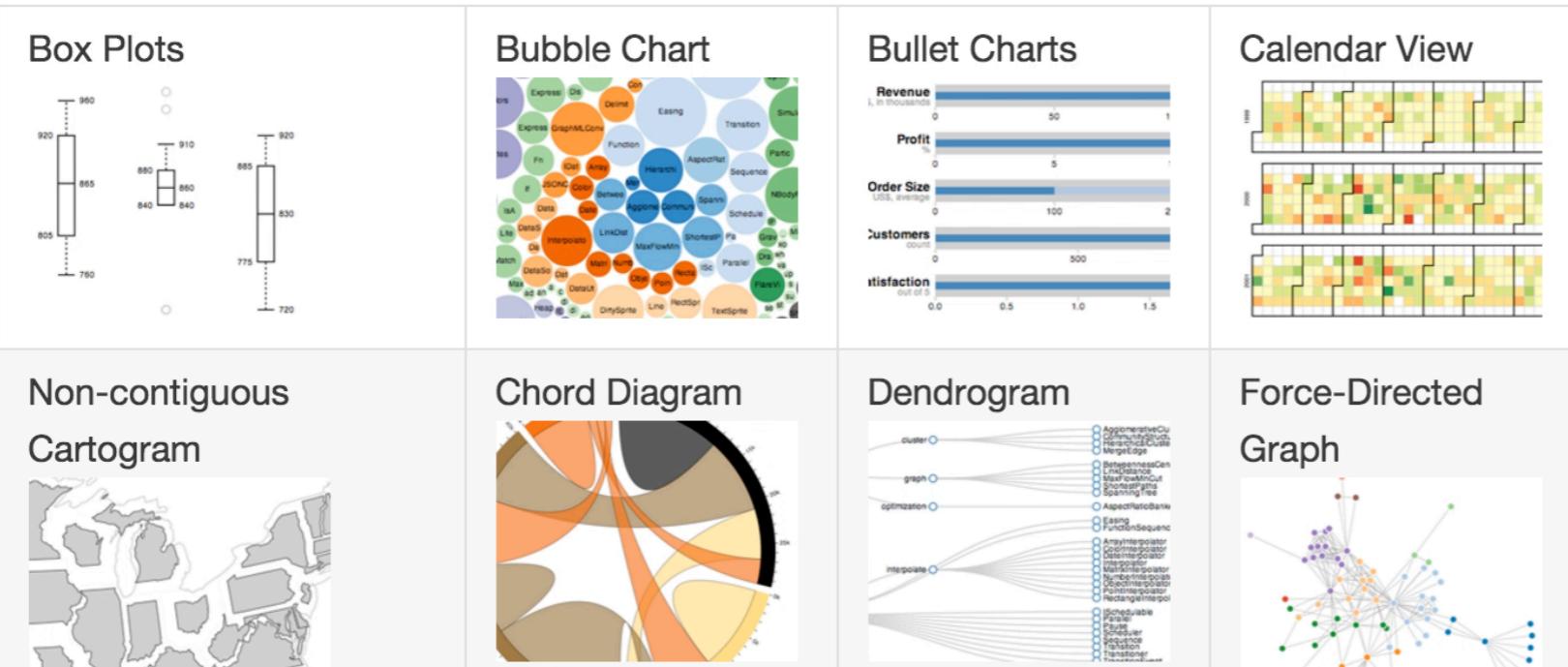
[Edit](#)[New Page](#)

nswamy14 edited this page 10 days ago · 1026 revisions

[Wiki](#) ▶ [Gallery](#)

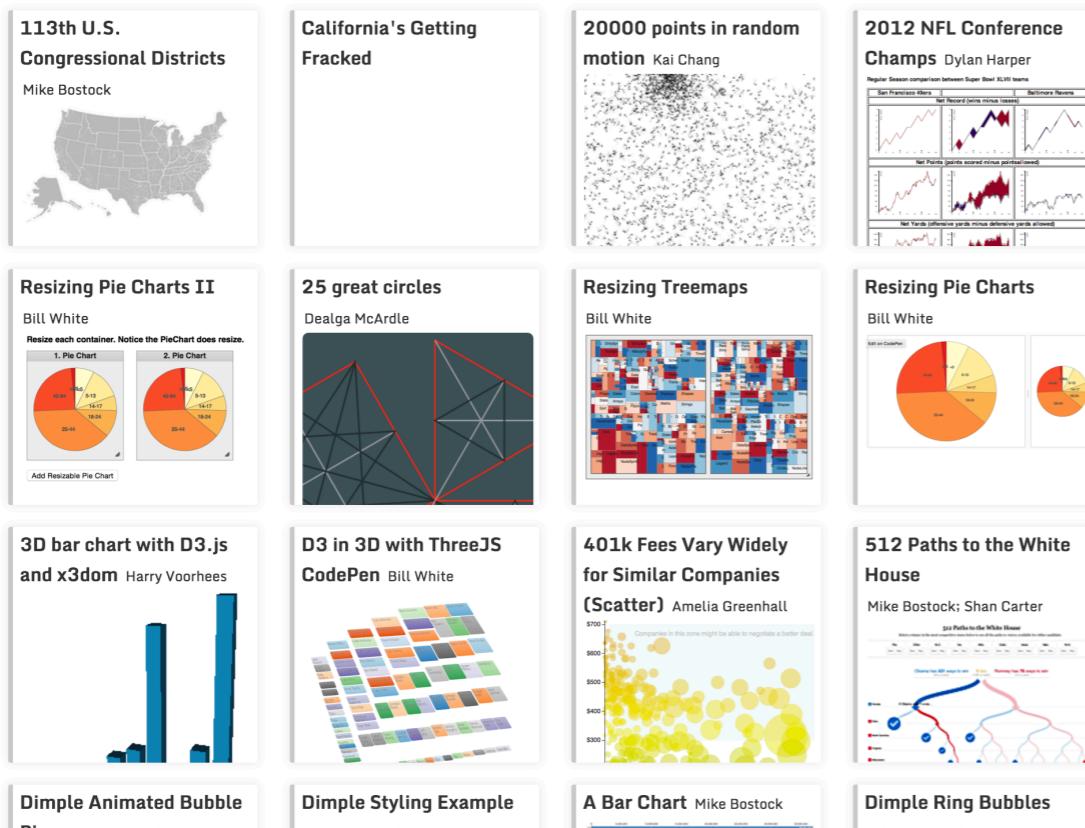
Welcome to the **D3 gallery**! More examples are available on [bl.ocks.org/mbostock](#). If you want to share an example and don't have your own hosting, consider using [Gist](#) and [bl.ocks.org](#). If you want to share or view live examples try [runnable.com](#) or [vida.io](#).

## Visual Index

[Pages](#) 117[Home](#)[3.0](#)[3.1](#)[API 中文手册](#)[API Reference](#)[API Reference \(русскоязычная версия\)](#)[API リファレンス](#)[Api 参考](#)[Arrays](#)[Behaviors](#)[Bundle Layout](#)[Chord Layout](#)[Cluster Layout](#)

D3.js Gallery (2490Examples!) | Static list | About

Author	Chart Type	Title
	Chart Type	Untagged 1575
	Map	Map 236
	Reusable	Reusable 98
	Network	Network 69
Bar Chart	62	
Line Chart	58	
Math	46	
Scatterplot	41	
Area Chart	34	
Pie Chart	27	
Bubble Chart	25	
Tree	23	
Voronoi	17	
Chord Diagram	15	
Parallel Coordinates	15	
Stacked Bar Chart	14	
Sankey	14	
Choropleth	14	
Experiment	12	
Heatmap	11	
Cartogram	11	
Sunburst	11	
Dimple Animated Bubble		
Dimple Styling Example		
A Bar Chart	Mike Bostock	
Dimple Ring Bubbles		



# blocksplorer.org

Many examples of `d3.js` usage are posted daily on <http://bl.ocks.org/>, however they aren't easy to find. If you are looking for a specific example of how to use a particular API call, you may be out of luck... until now.

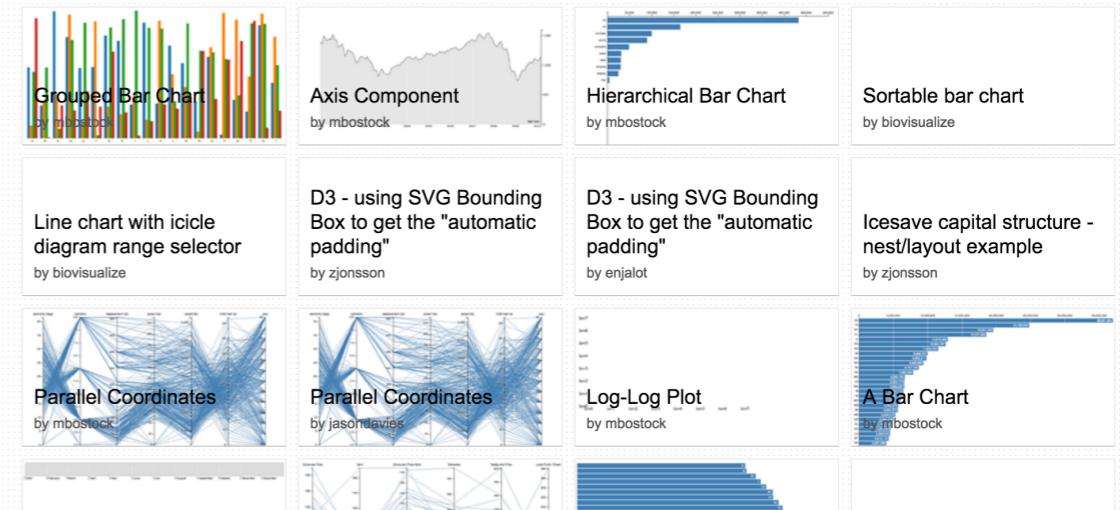
Type any d3 API call below and see the blocks (or gists) that use it.

`d3.svg.axis`

Go

Start typing any d3 api name, for example `d3.svg.axis...`

## Results for "d3.svg.axis"



# Awesome D3



This list keeps track of interesting [D3js](#) libraries, plugins and utilities.

We decided not to list tutorials, resources or concepts here, because there is already a [very good list of readings](#) out there you can check out and contribute to.

Curators: [Moritz Klack](#) and [Christopher Möller](#) of [webkid.io](#)

## Charts

- [bullet chart](#) - Bullet chart
- [cirrus.js](#) - A multi-renderer charts library
- [cubism](#) - Time Series Visualization
- [cola.js](#) - Layout for graph visualization and exploration
- [c3](#) - Reusable chart library
- [dc](#) - For heavy amounts of data
- [dimple](#) - An object-oriented API for business analytics
- [d3.chart](#) - Framework for building reusable charts
- [d3-flame-graph](#) - Flame graphs from hierarchical data.
- [d3fc](#) - A collection of interactive chart components
- [D3Funnel](#) - A funnel and pyramid chart library
- [d3panels](#) - Interactive charts with linked brushing
- [d3pie](#) - A configurable pie chart lib and generator
- [D3xter](#) - Straight forward plotting
- [D4](#) - Re-usable charts DSL
- [epoch](#) - A general purpose, real-time visualization library
- [fancharts](#) - Library to visualize percentage values

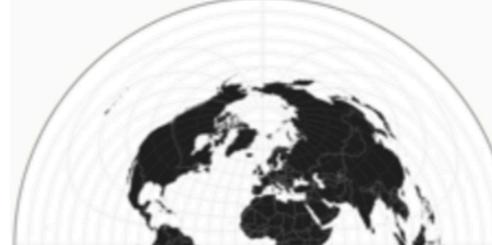
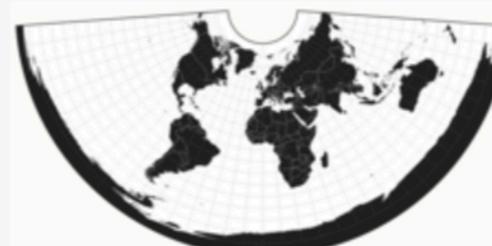
# Geo Projections

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张天旭 edited this page on Jun 29 · 121 revisions

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D3 includes several common projections by default, as shown below. Numerous (less-commonly used) projections are available in the [extended geographic projections plugin](#) and the [polyhedral projection plugin](#).

d3.geo.albersUsa	d3.geo.azimuthalEqualArea	d3.geo.azimuthalEquidistant
		
d3.geo.conicEqualArea	d3.geo.conicConformal	d3.geo.conicEquidistant
		
d3.geo.equirectangular	d3.geo.gnomonic	d3.geo.mercator
		
d3.geo.orthographic	d3.geo.stereographic	d3.geo.transverseMercator
		

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<https://github.com/mboström/d3.js> 

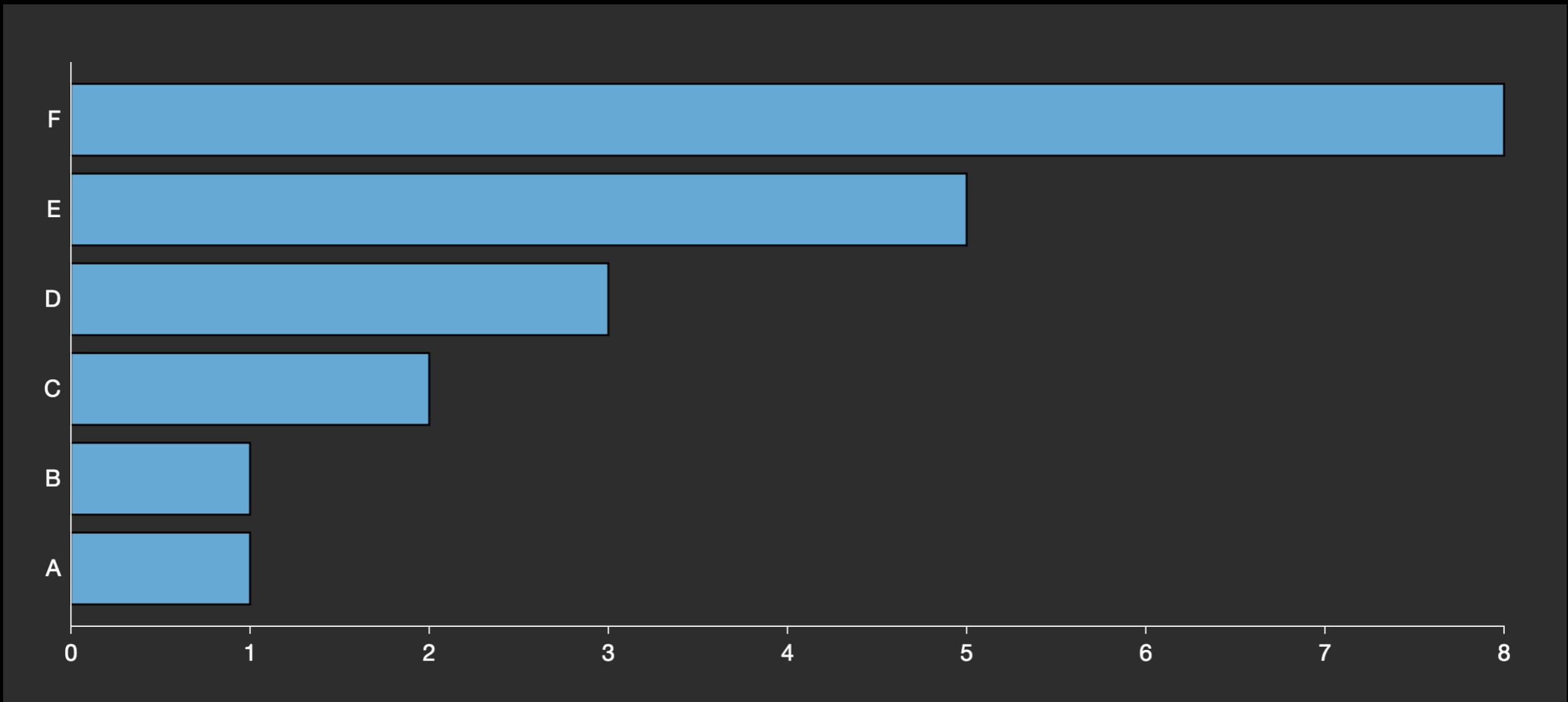
# **THE TOP D3 PRINCIPLE:**

## **THE DATA STRUCTURE SHOULD FOLLOW THE VISUAL STRUCTURE**

# DATA STRUCTURE

```
var data = [1, 1, 2, 3, 5, 8];
```

# VISUAL STRUCTURE



# DATA STRUCTURE

```
var data = [  
  {x: 10.0, y: 9.14},  
  {x: 8.0, y: 8.14},  
  {x: 13.0, y: 8.74},  
  {x: 9.0, y: 8.77},  
  {x: 11.0, y: 9.26}  
];
```

# VISUAL STRUCTURE

