

# DATA VIZ DC SHORT COURSE

ON...



# We will cover:

1. The components of a data visualization
2. How svg shapes are created
3. How to select svg shapes with D3.js
4. JSON and JavaScript `.map()`
5. How to add data onto the screen using D3.js

# We will cover:

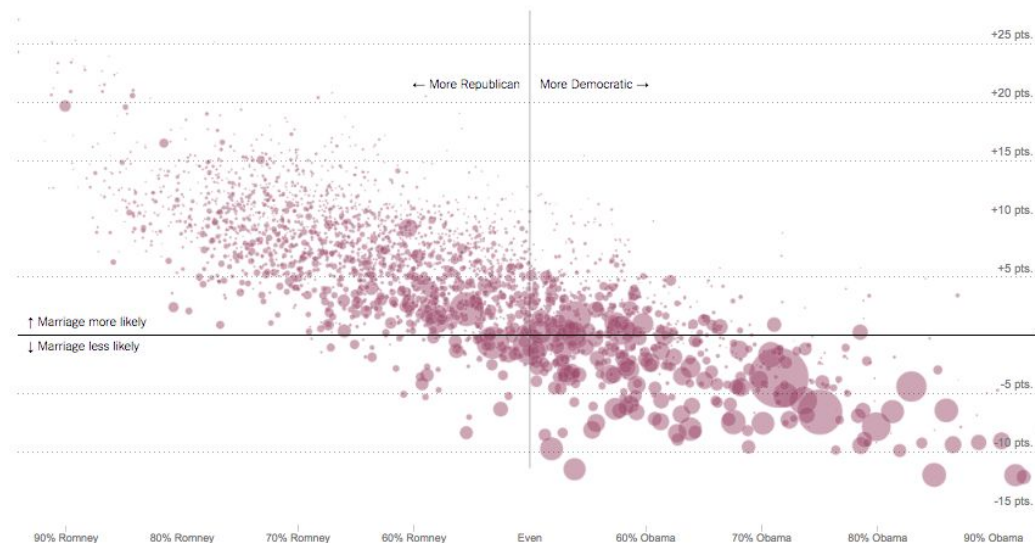
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# Scatter Plot

## Red and Blue America

### Marriage effects by 2012 presidential vote

Each circle represents one county; circles are sized by population



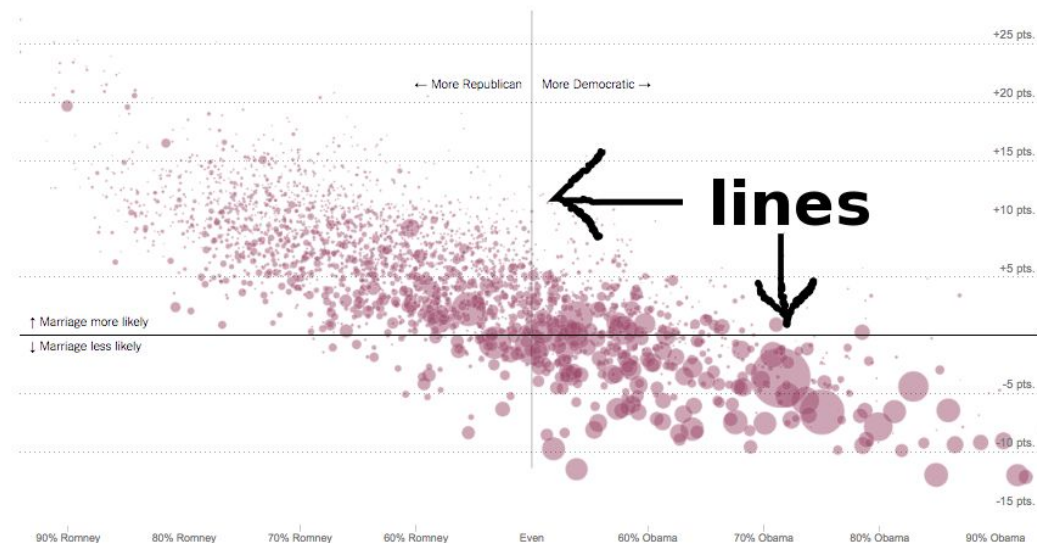
Based on share of two-party vote; estimates are based on a full childhood in each county (up to age 20).

# Scatter Plot

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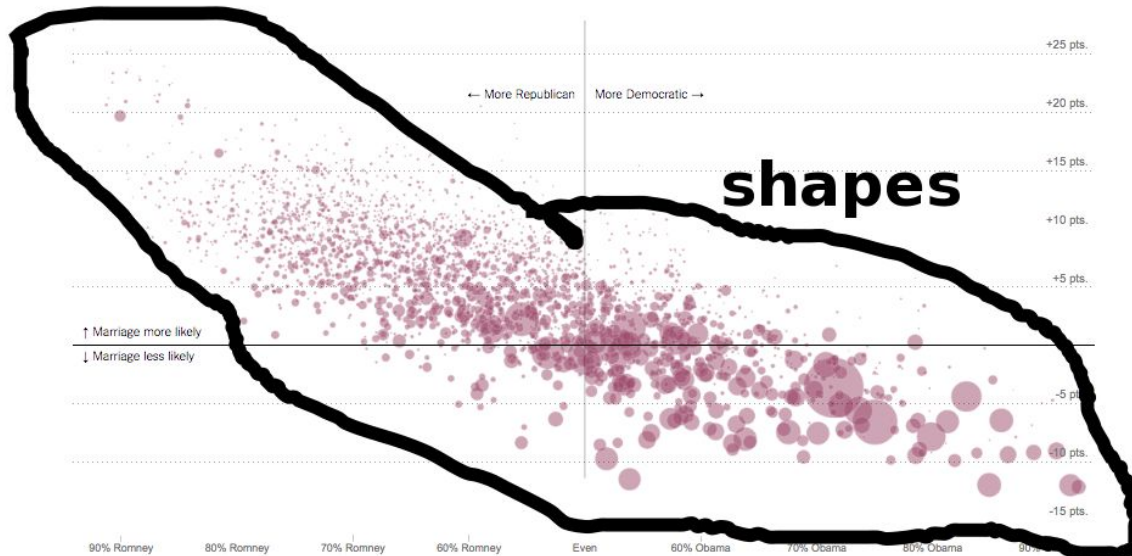
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# Scatter Plot

## Red and Blue America

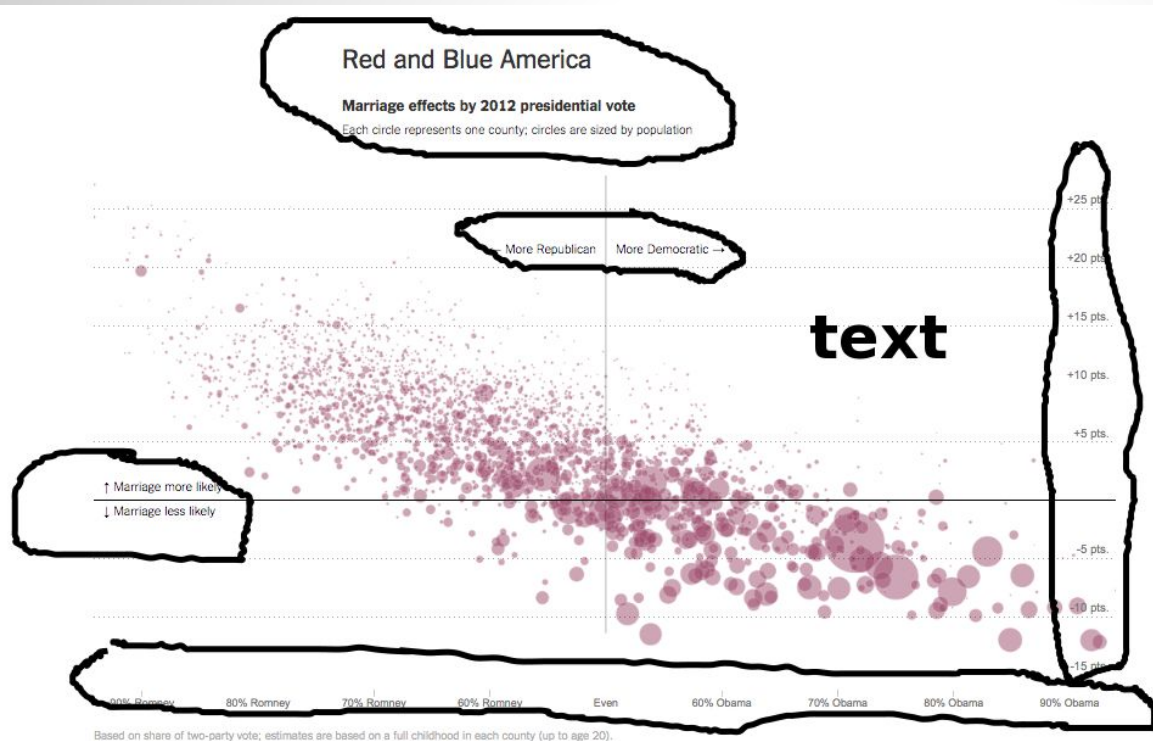
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# Scatter Plot



# Bar Chart

The New York Times

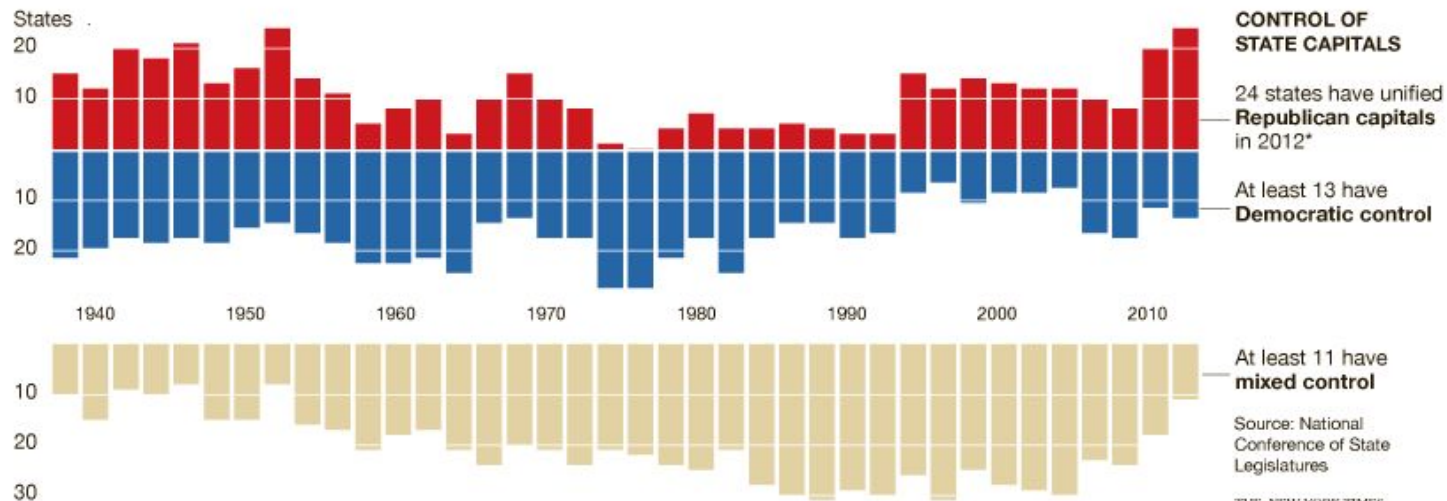
November 24, 2012

## Complete Control

There are now more state capitals dominated by a single party — where one party controls the legislature and the governor's office — than at any time since 1952.

\* Virginia is counted as unified Republican because its State Senate is tied and its tiebreaker, the lieutenant governor, is a Republican.

† Early results appeared to show that New York had unified Democratic control, but votes are still being counted in many races.





# Bar Chart

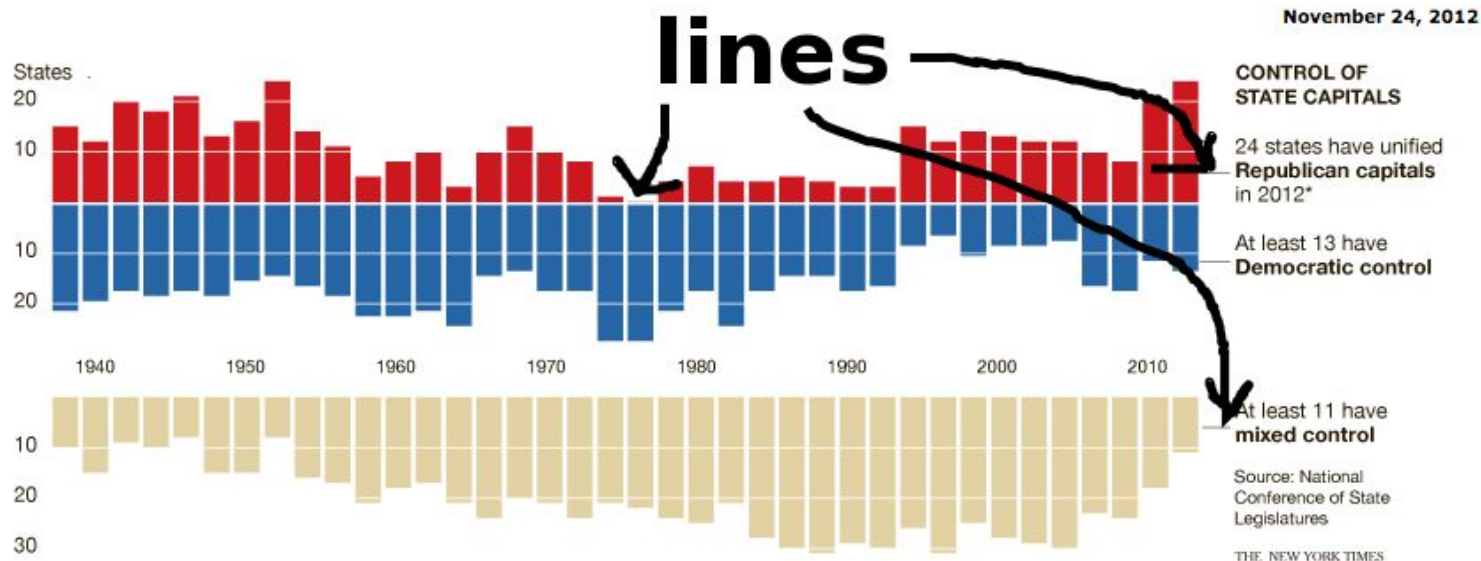
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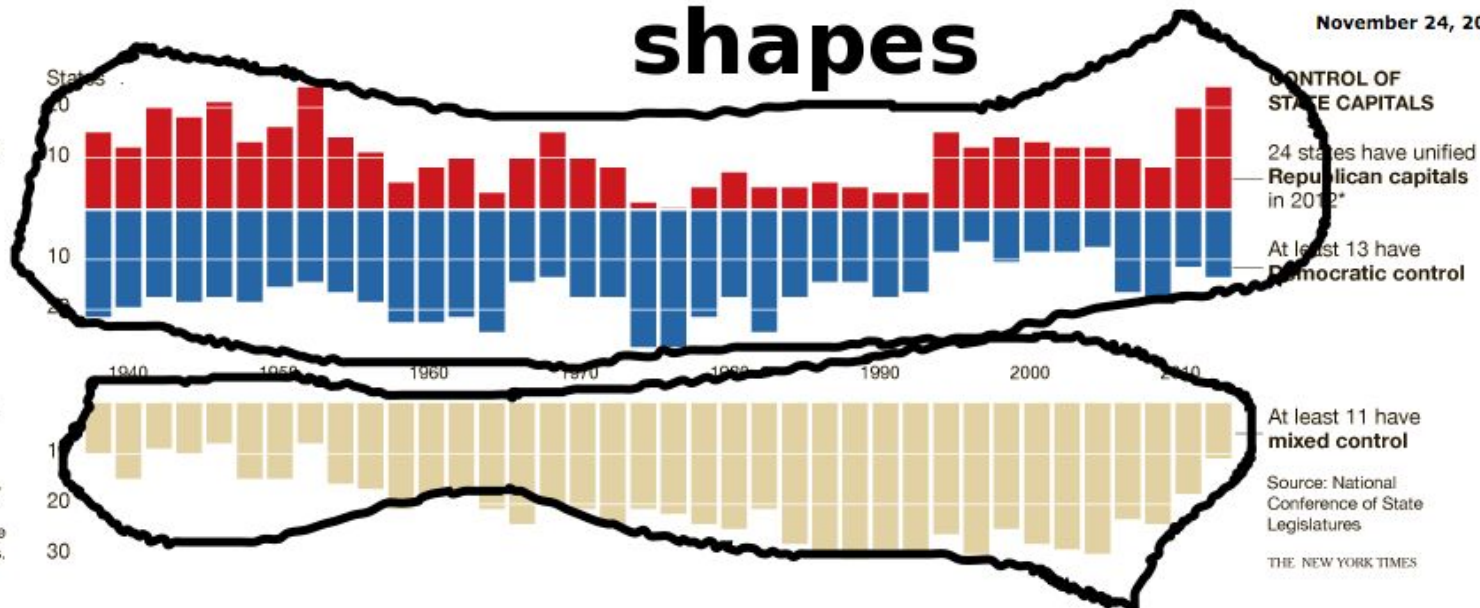
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# shapes

November 24, 2012



# Bar Chart

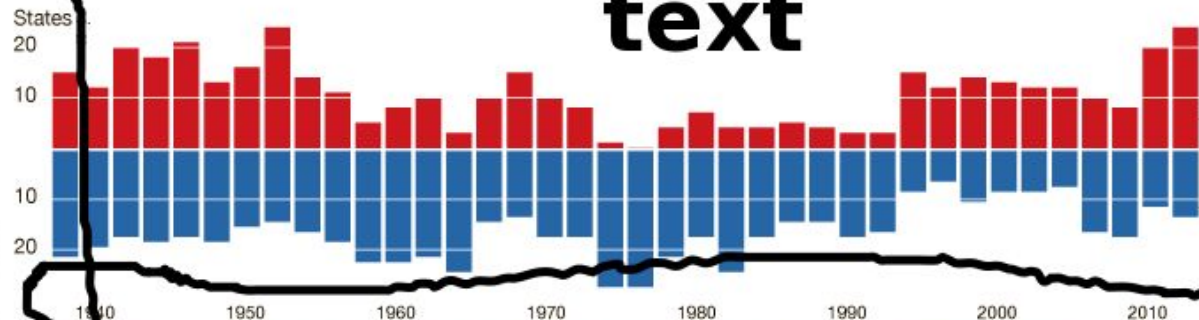
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text

November 24, 2012

## CONTROL OF STATE CAPITALS

24 states have unified Republican capitals in 2012\*

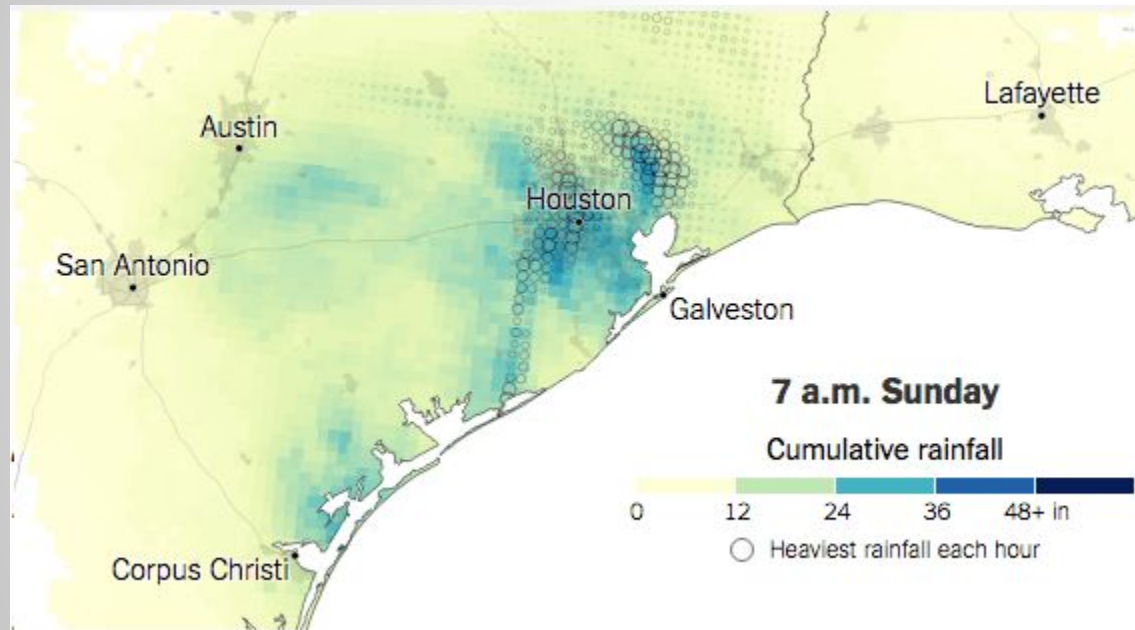
At least 13 have Democratic control

At least 11 have mixed control

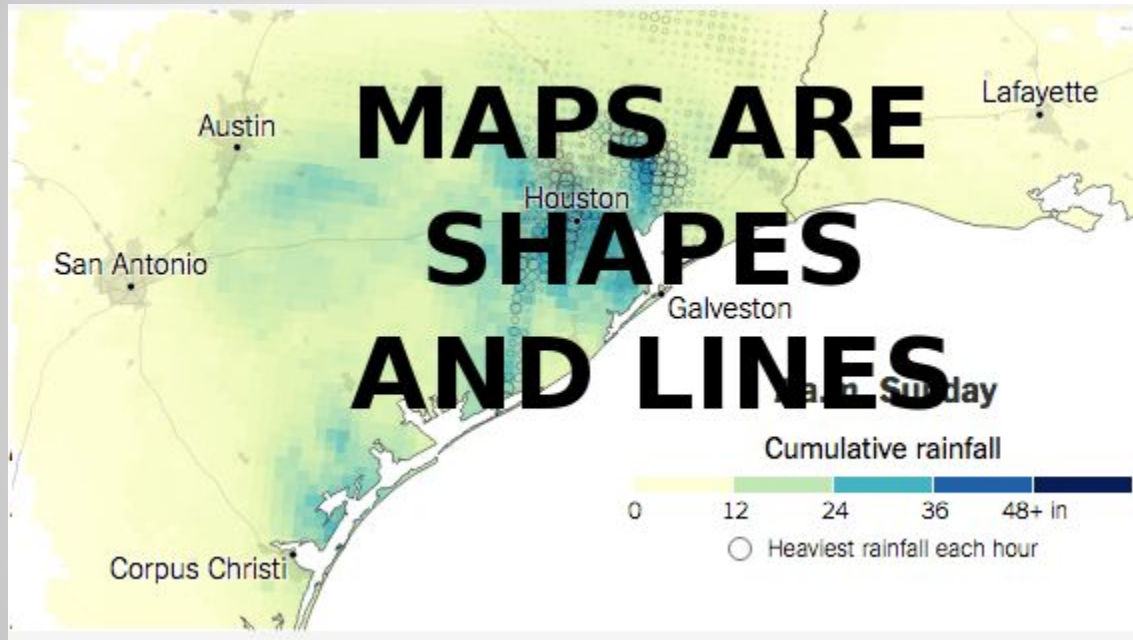
Source: National Conference of State Legislatures

THE NEW YORK TIMES

# Map

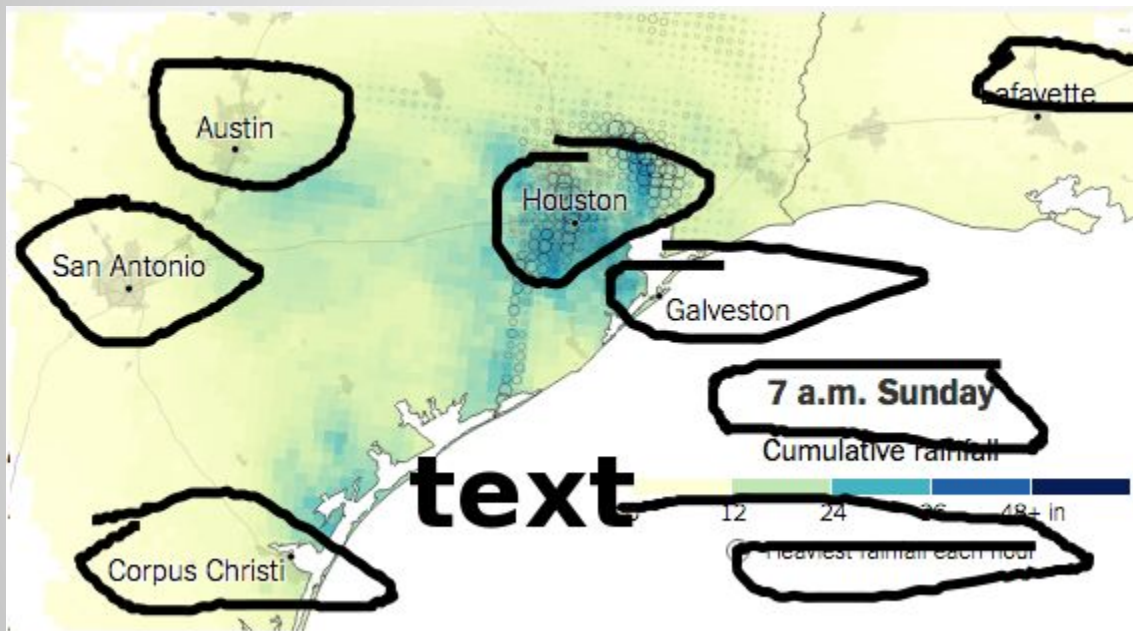


# Map

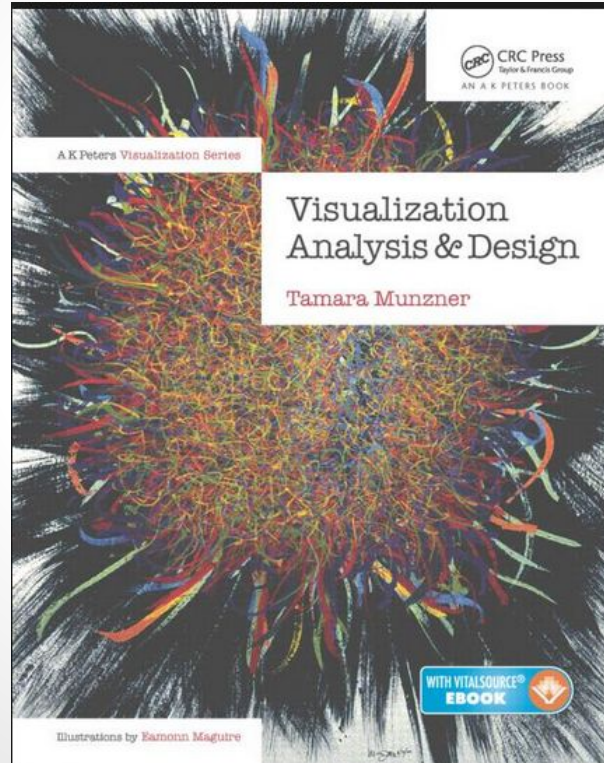




# Map



# Tamara Munzner



# Marks & Channels

## Definitions: Marks and channels

- marks

- geometric primitives

→ Points



→ Lines



→ Areas



- channels

- control appearance of marks

→ Position

→ Horizontal



→ Vertical



→ Both



→ Color



→ Shape



→ Tilt



→ Size

→ Length



→ Area



→ Volume



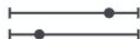


# Channels

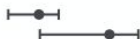
## Channels: Rankings

### ➔ **Magnitude** Channels: **Ordered** Attributes

Position on common scale



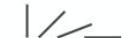
Position on unaligned scale



Length (1D size)



Tilt/angle



Area (2D size)



Depth (3D position)



Color luminance



Color saturation



Curvature



Volume (3D size)



Best

Effectiveness

Least

### ➔ **Identity** Channels: **Categorical** Attributes

Spatial region



Color hue



Motion



Shape



- **effectiveness principle**

- encode most important attributes with highest ranked channels

- **expressiveness principle**

- match channel and data characteristics

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# HTML

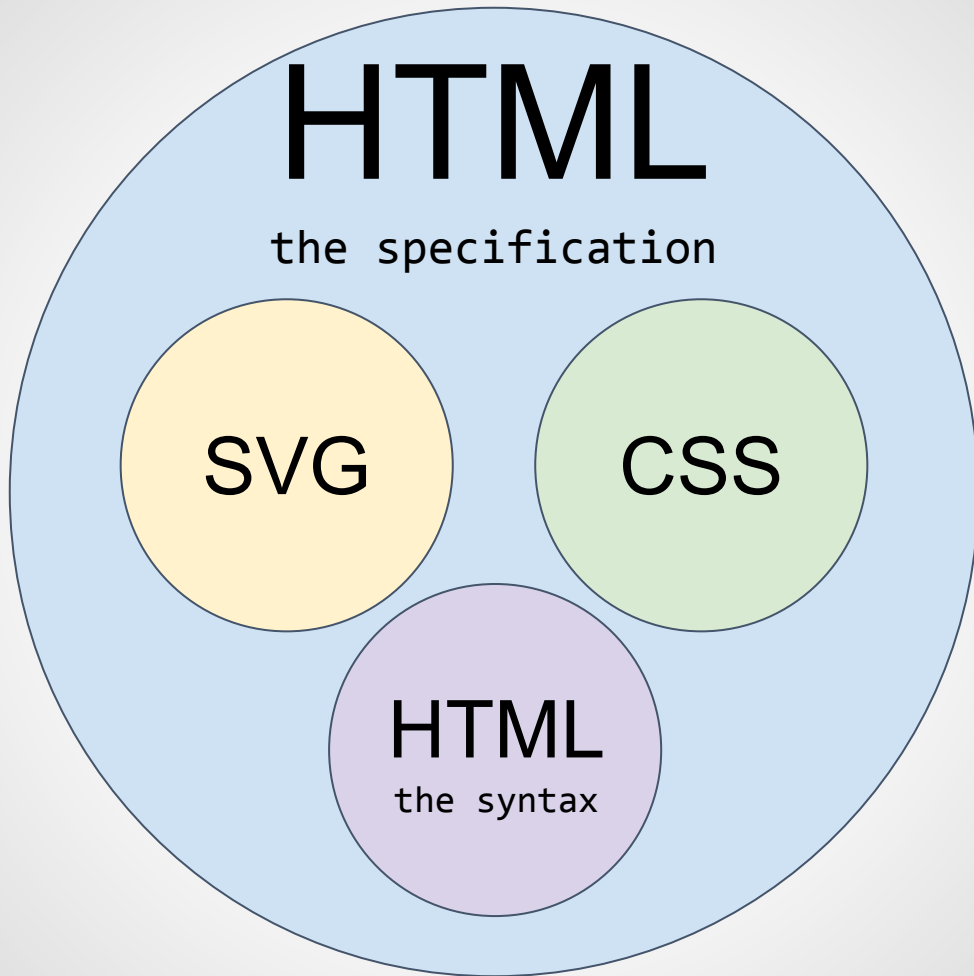
the specification

## SVG

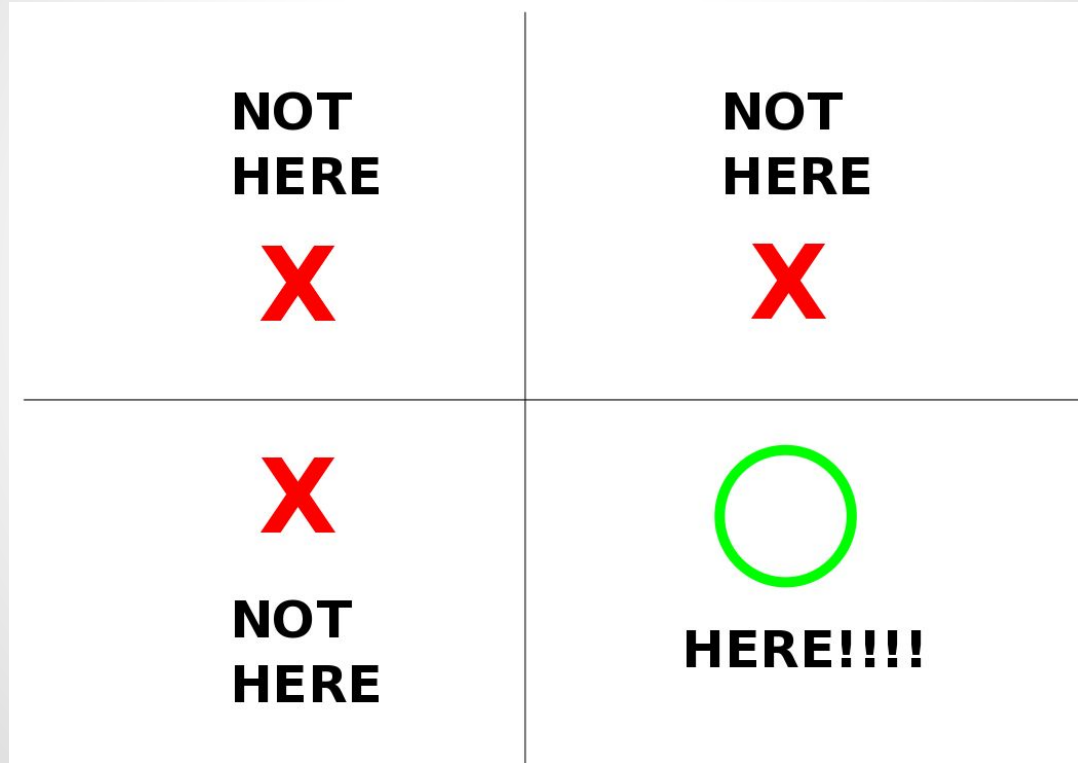
## CSS

# HTML

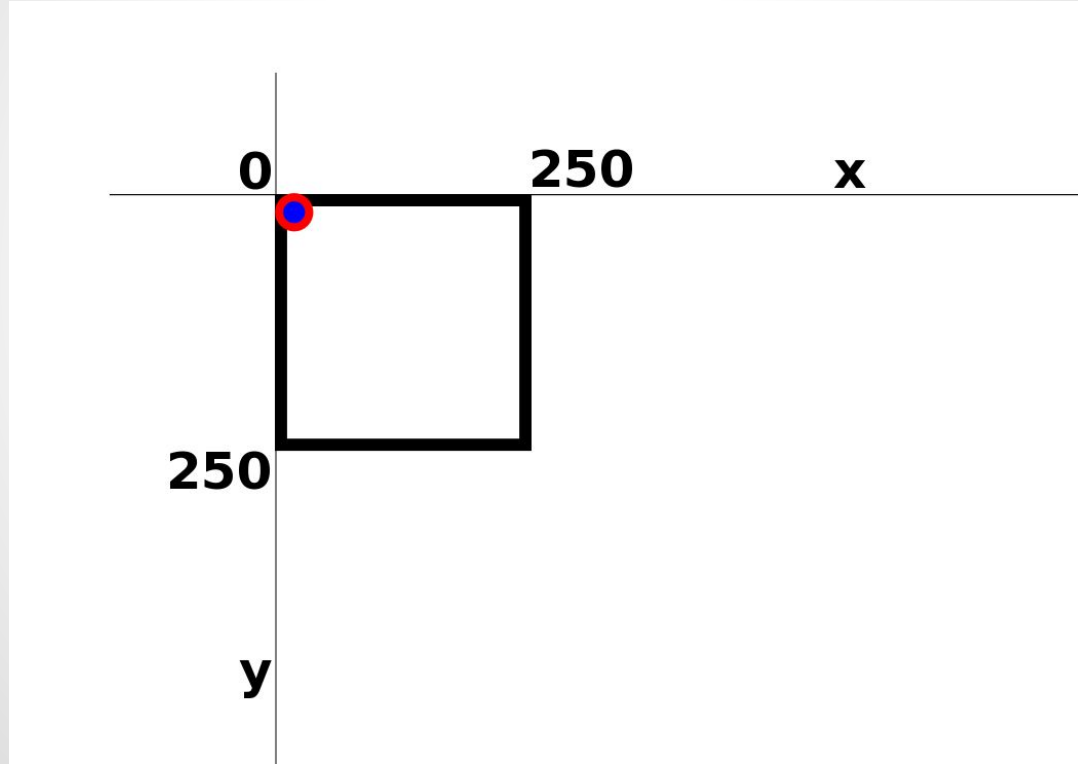
the syntax



# YOUR SCREEN IS THE BOTTOM RIGHT

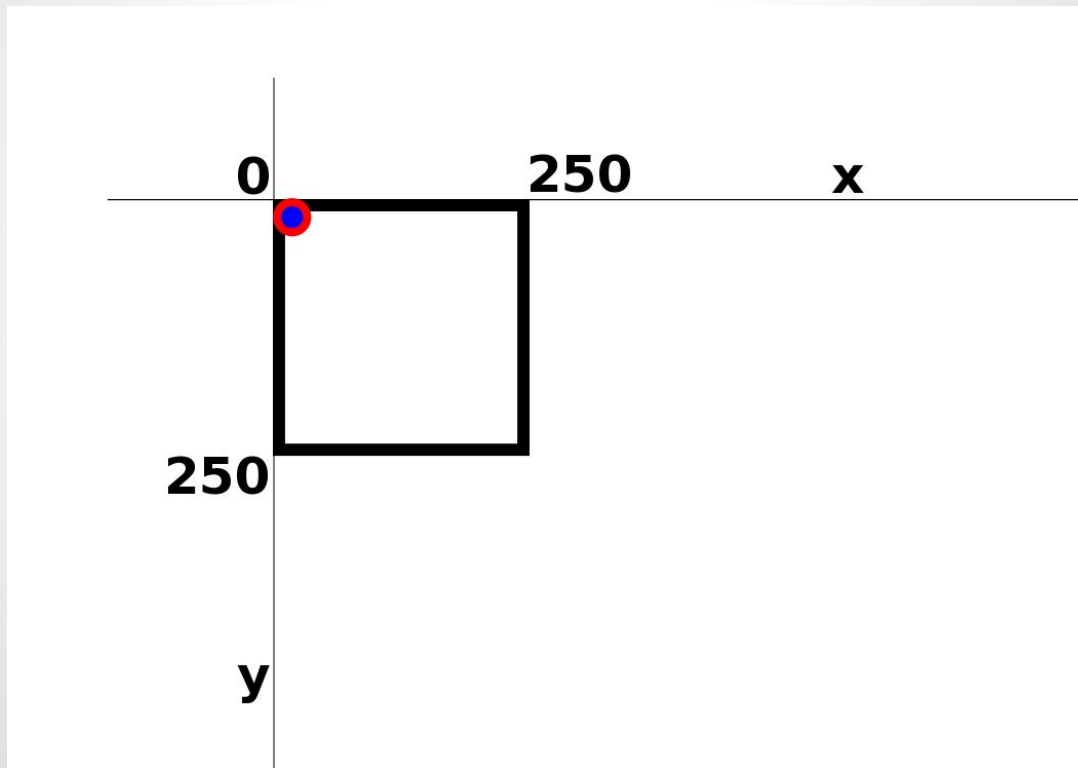


```
<rect x="0" y="0" width="250" height="250" />
```



`<rect x="0" y="0" width="250" height="250" />`

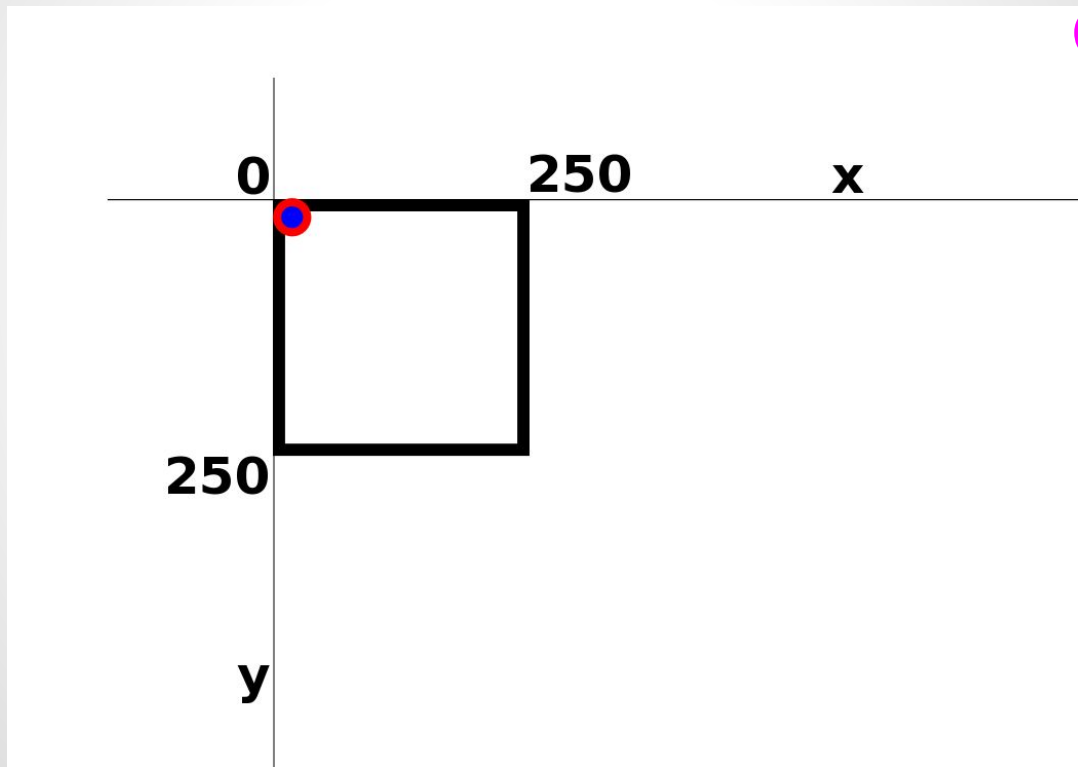
MARK



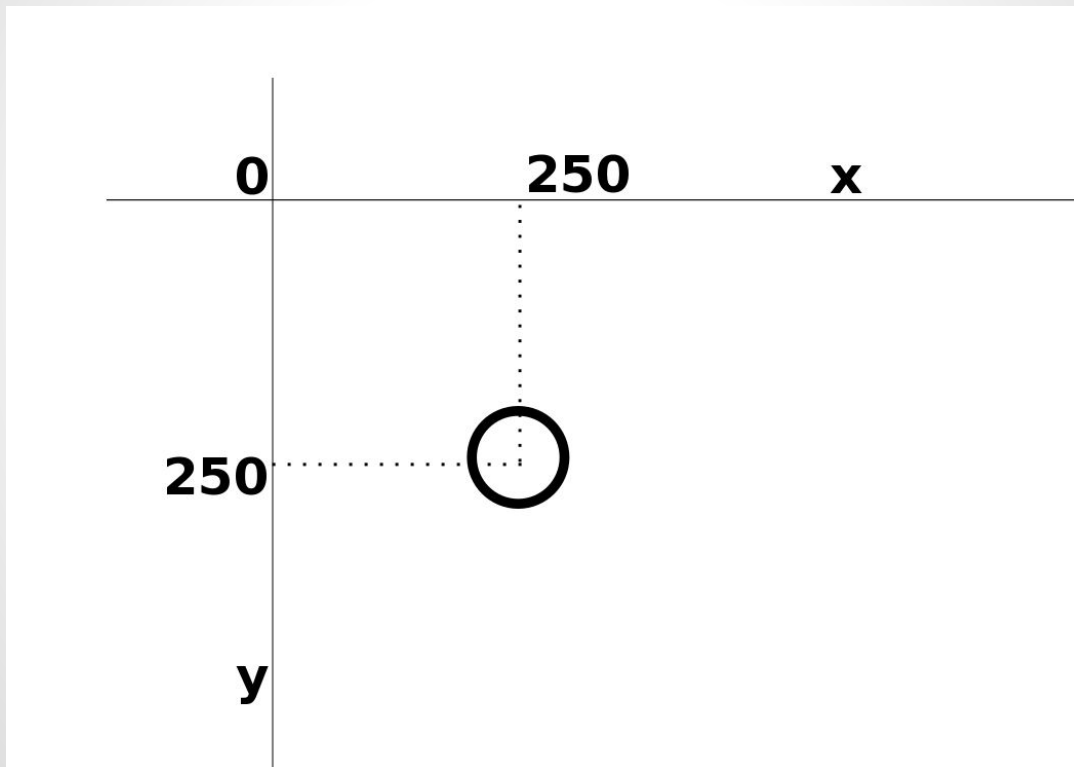
`<rect x="0" y="0" width="250" height="250" />`

MARK

CHANNELS



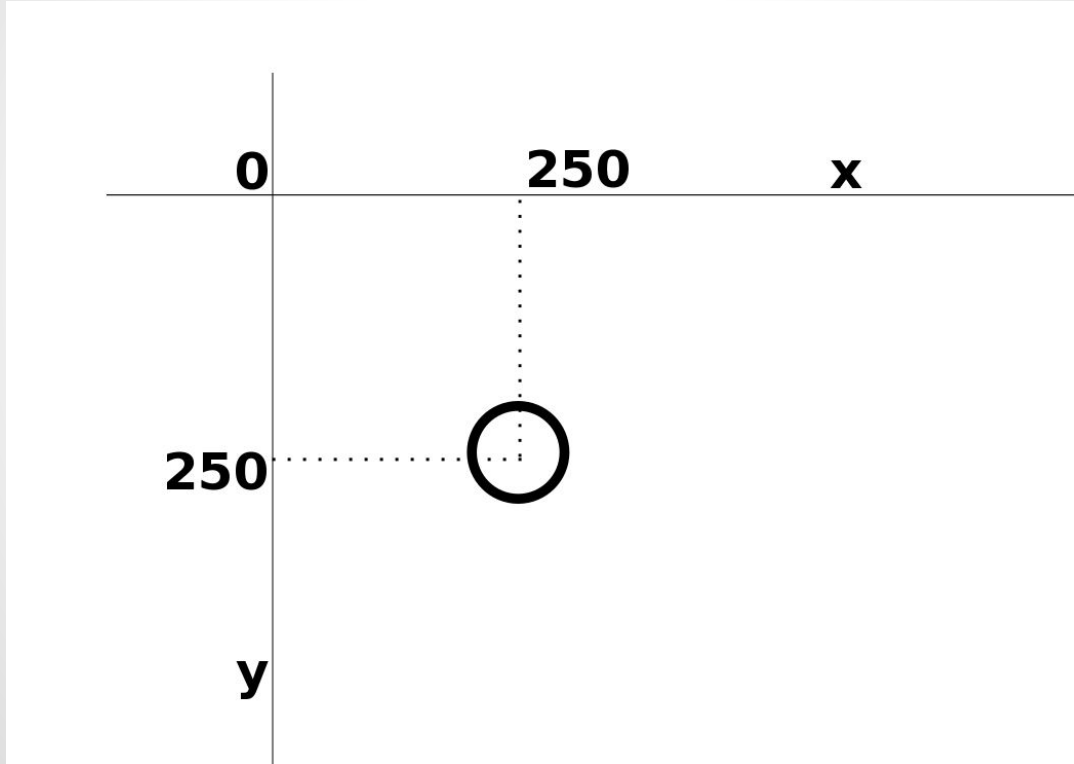
```
<circle cx="250" cy="250" r="50" />
```





`<circle cx="250" cy="250" r="50" />`

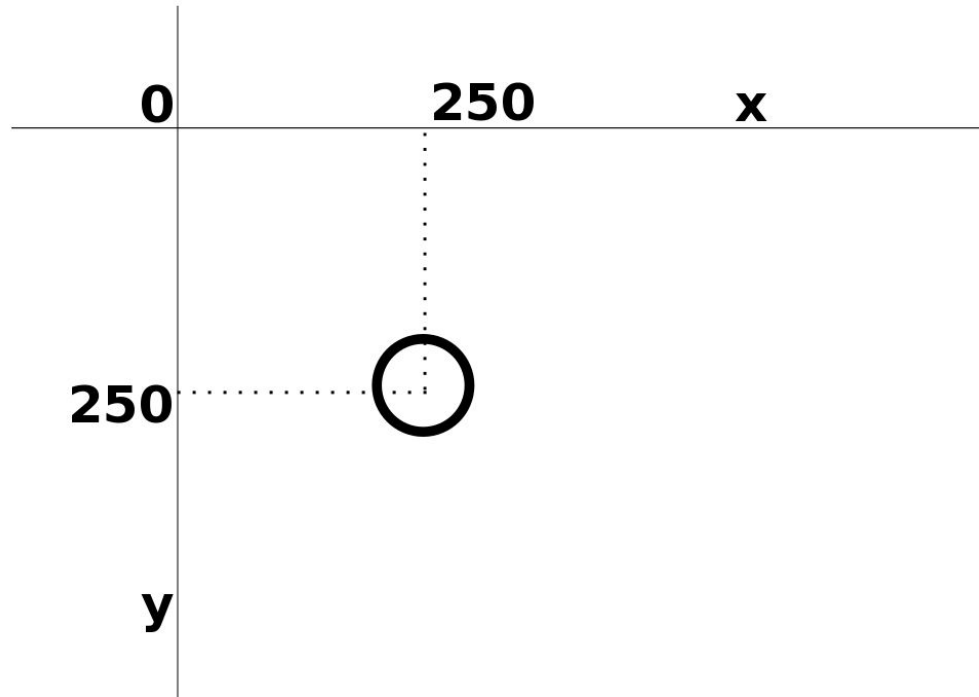
MARK



`<circle cx="250" cy="250" r="50" />`

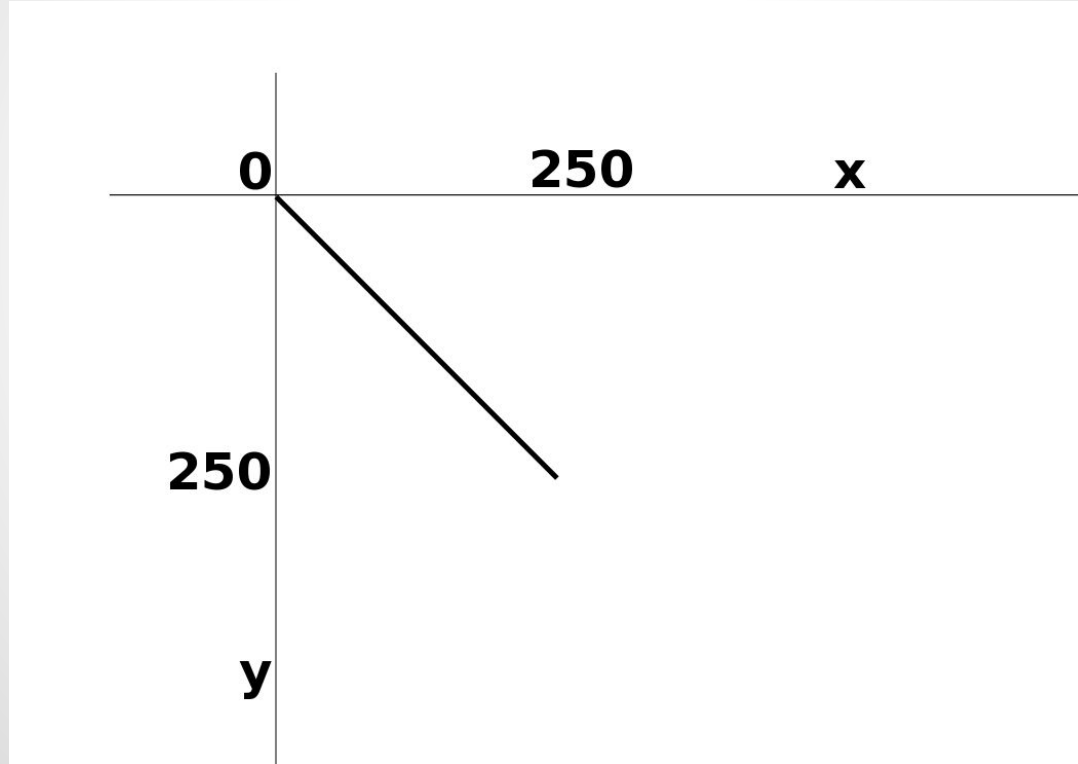
MARK

CHANNELS



`<line x1="0" y1="0" x2="250" y2="250"`  
`stroke="black"/>`

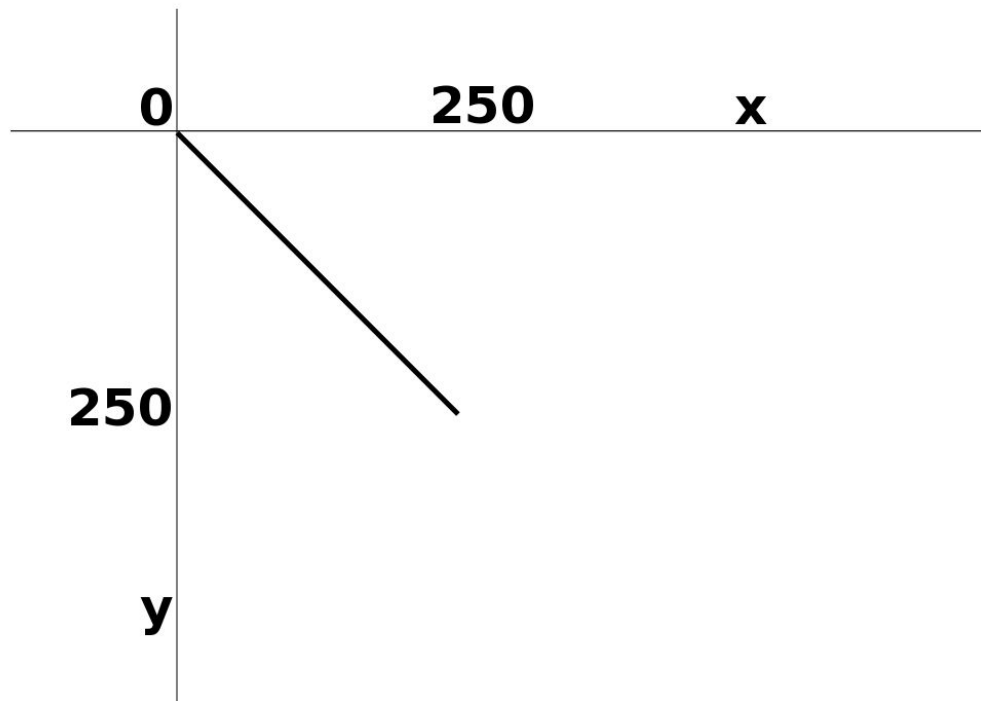
MARK



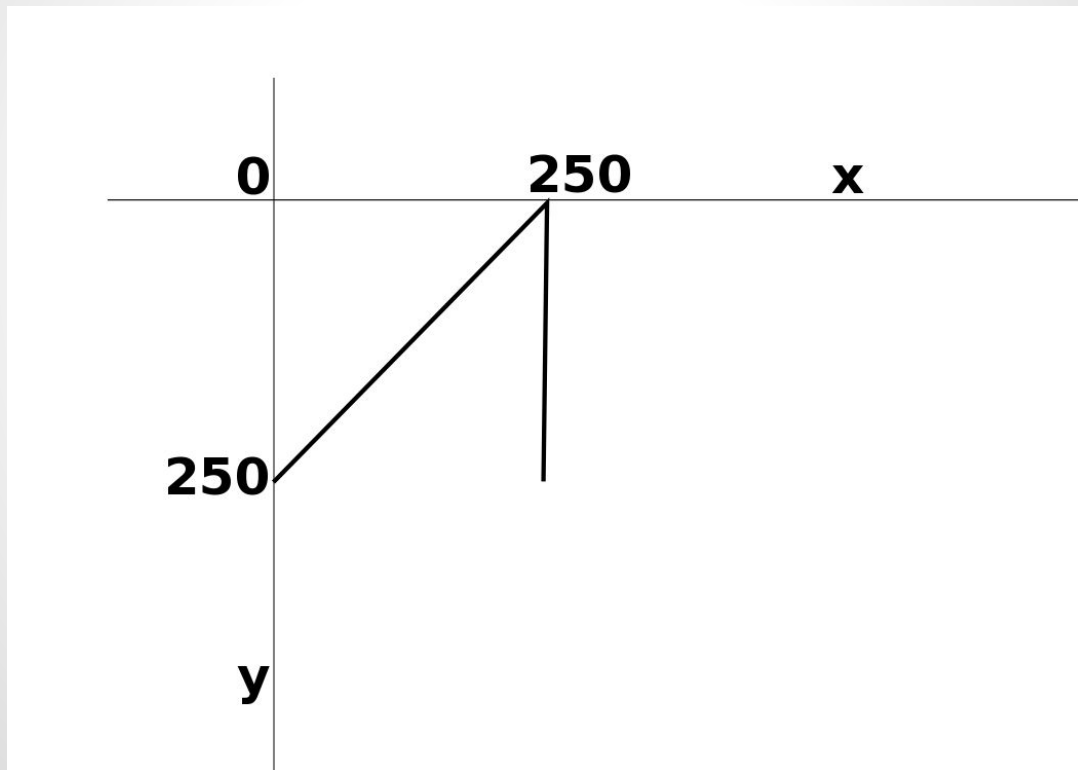
```
<line x1="0" y1="0" x2="250" y2="250"  
stroke="black"/>
```

MARK

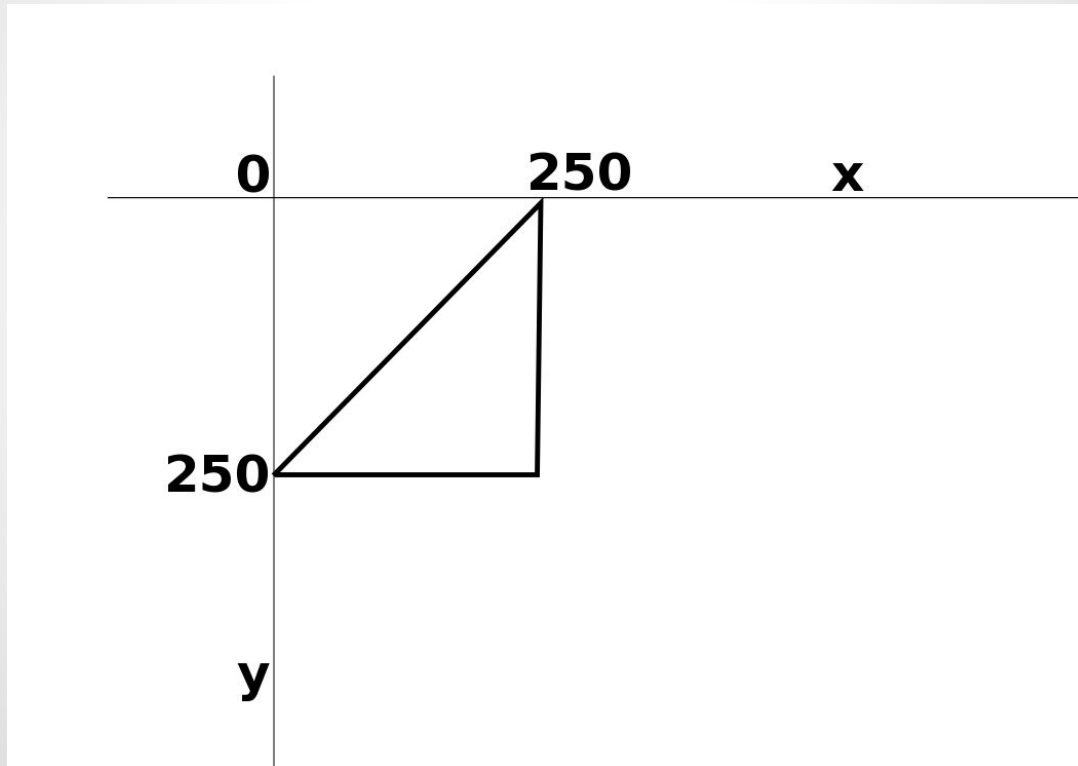
CHANNELS



```
<path d="M 0 250 L 250 0 L 250 250"  
style="fill: transparent; stroke: black"/>
```



```
<path d="M 0 250 L 250 0 L 250 250 Z"  
style="fill: transparent; stroke: black"/>
```





# CODE!!!!

<https://d3js.org/>

[https://github.com/beemyfriend/intro\\_d3/](https://github.com/beemyfriend/intro_d3/)



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# AWESOME RESOURCES:

**D3 Slack Channel:** <https://d3-slackin.herokuapp.com/>

**Curran's Data Viz Course:** <https://curran.github.io/dataviz-course-2018/>

**bl.ocks:** <http://blockbuilder.org/search>

**Nadieh Bremer & Shirley Wu:** <http://www.datasketch.es/>

**D3.js in Action:** <https://www.manning.com/books/d3js-in-action-second-edition>