

# Build Your First Data Visualization with D3

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## GETTING STARTED



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# Overview

## In this module

- The D3 library
- Using D3 examples
- Project Setup
- Add D3 to the page

# The D3 Library

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# Data-Driven Documents

# Maps Data to DOM Elements in Browser



# D3 Is a JavaScript Library

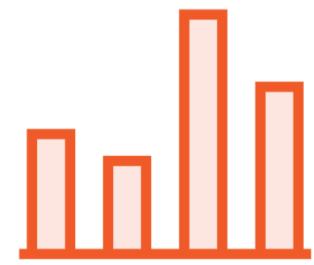
**Uses existing language**

**JavaScript is the most widely used language**

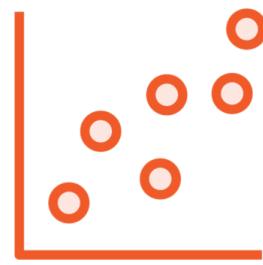
**Uses web standards**

**Best practices, ES6, CSS, browser based technologies**

# D3 Use Cases



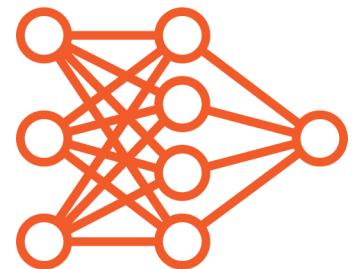
Bar Chart



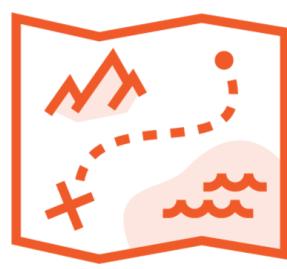
Scatterplot



Pie Charts



Network Diagrams



Maps



Creative/  
Experimental

# Scalable Vector Graphics (SVG)



## Rectangles

```
<svg width="400" height="110">  
  <rect width="300" height="100"/>  
</svg>
```



## Circles

```
<svg width="400" height="110">  
  <circle cx="50" cy="50" r="40"/>  
</svg>
```



## Lines

```
<svg width="400" height="110">  
  <line x1="0" y1="0" x2="200" y2="200"/>  
</svg>
```



## Paths

```
<svg width="400" height="110">  
  <path d="M150 0 L75 200 L225 200 Z"/>  
</svg>
```

# Using D3 Examples

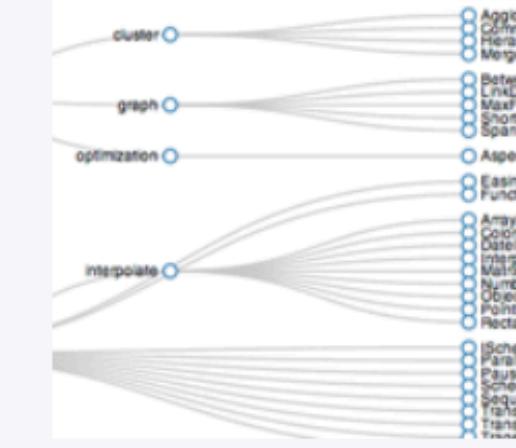
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Chord Diagram



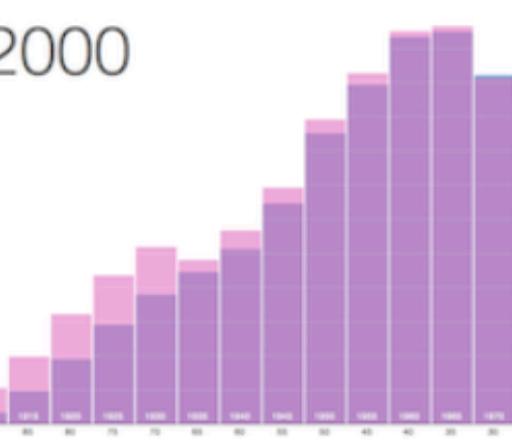
Dendrogram



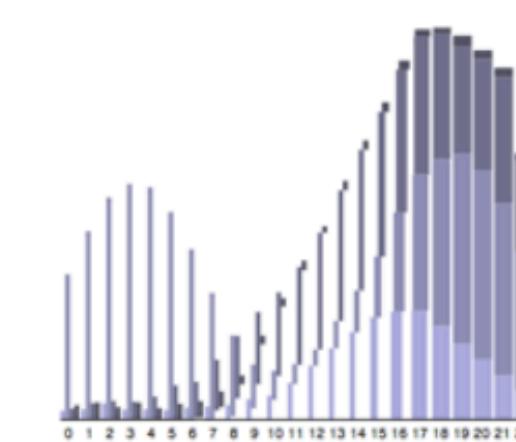
# D3 Gallery

<https://github.com/d3/d3/wiki/Gallery>

Population Pyramid



Stacked Bars



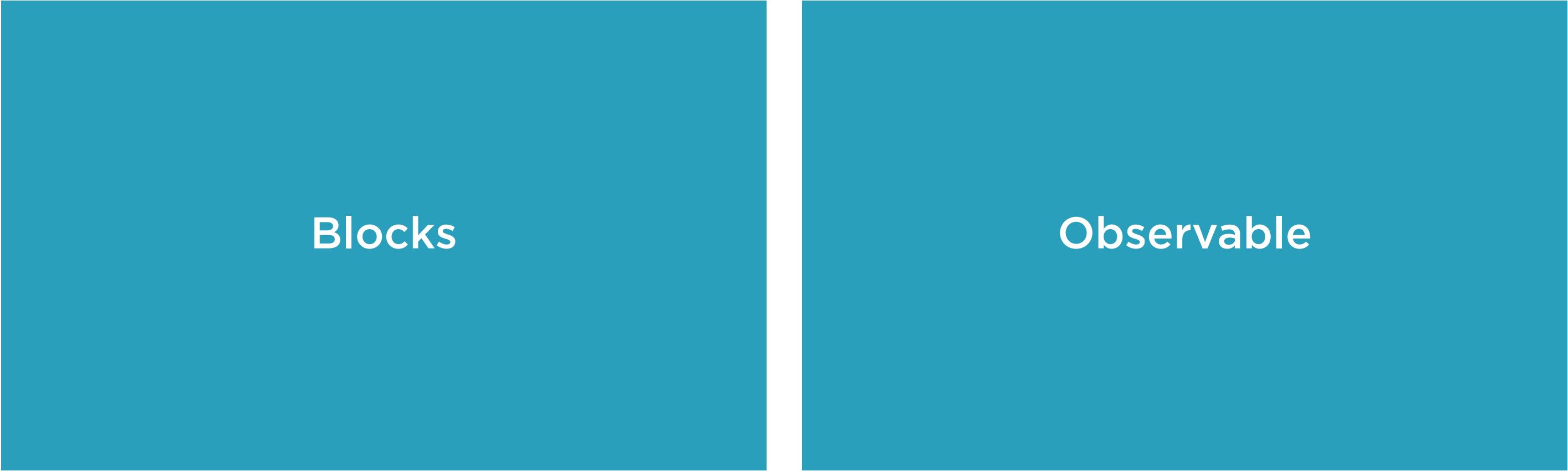
Node-Link Tree



Treemap



# Generally Two Types of Usable Code

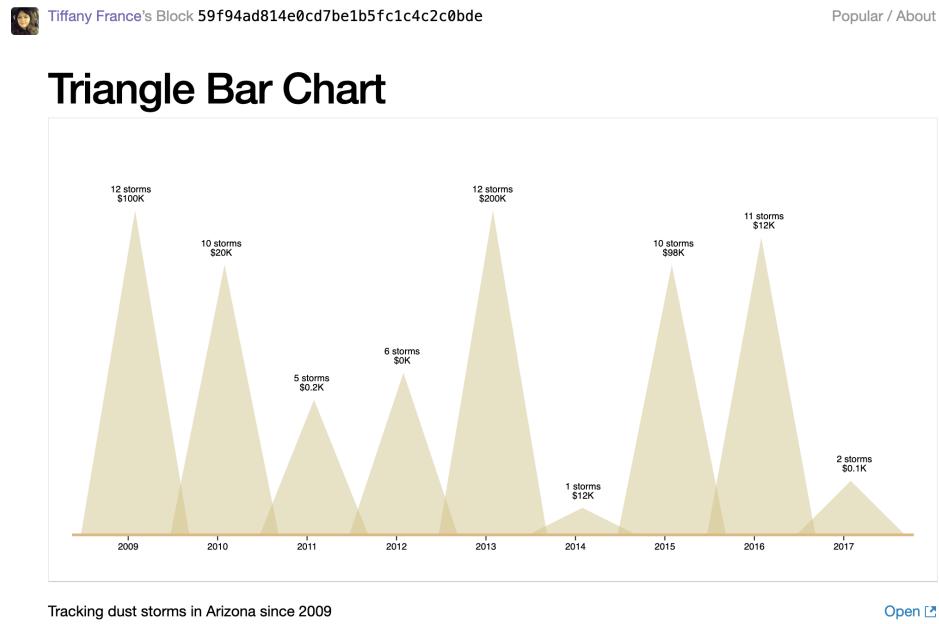


**Blocks**

**Observable**

# D3 Blocks

**Blocks are the original way of sharing D3 code**



# index.html

```
<!DOCTYPE html>
<meta charset="utf-8">
<style>
path.domain {
  display: none;
}
.label {
  font-size: 10px;
  font-family: sans-serif;
  text-anchor: middle;
}
</style>
<body>
```

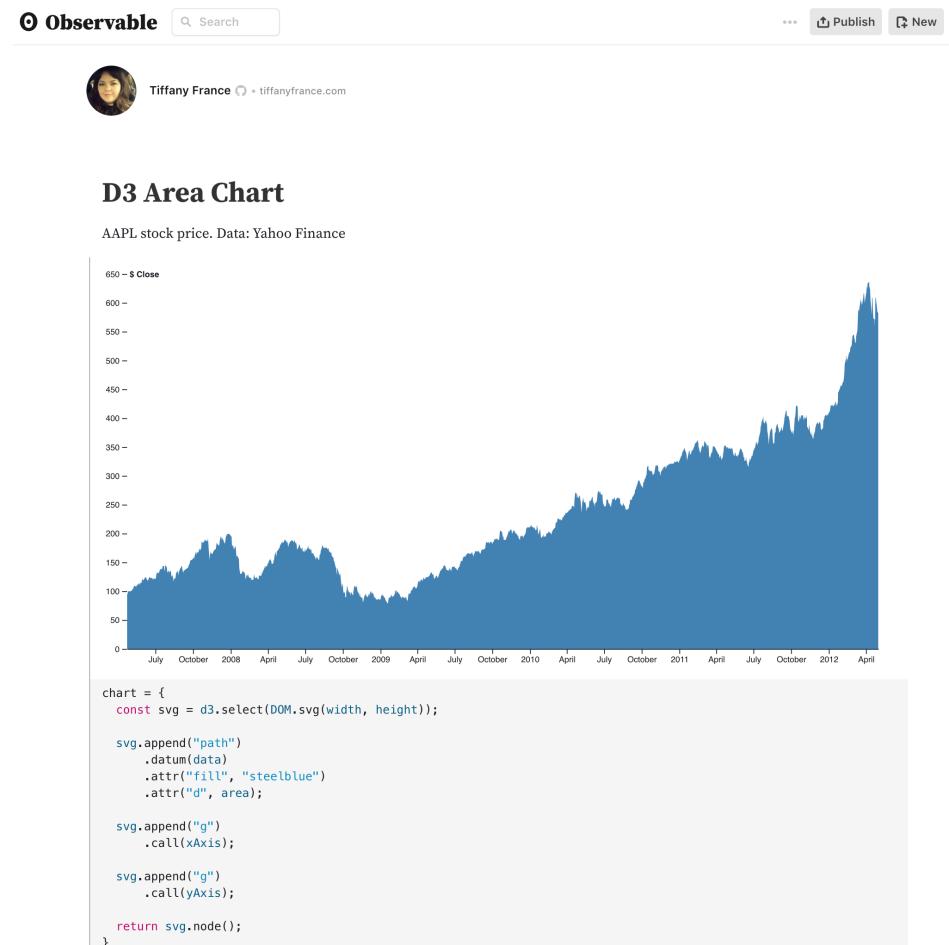
## Pros:

- Community sourced, published on GitHub/Gist
- Quick to get up and going

## Cons:

- Some blocks are very old
- Version < 4 are not backwards compatible

# Observable



## Observable is Bostock's latest project

- Similar to Jupyter Notebooks
- Quickly create and view visualizations
- Actively under development
- Can be used for multiple languages/projects

## Some things to watch out for:

- Can be complicated to learn/use
- Sometimes difficult to export code for use

# Project Setup

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# Starter Files



**index.html**



**sales.csv**

# Local Server Configuration

**Node.js**

**NPM**

**Node-static**

# Add D3 to the Page

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# Demo

## **Adding D3 to the page**

- D3 CDN, download, modules
- `.select()`
- `.append()`
- `.text()/.html()`

# Summary

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