Getting Started with D3

SETUP AND CREATING YOUR FIRST D3 VISUALIZATION

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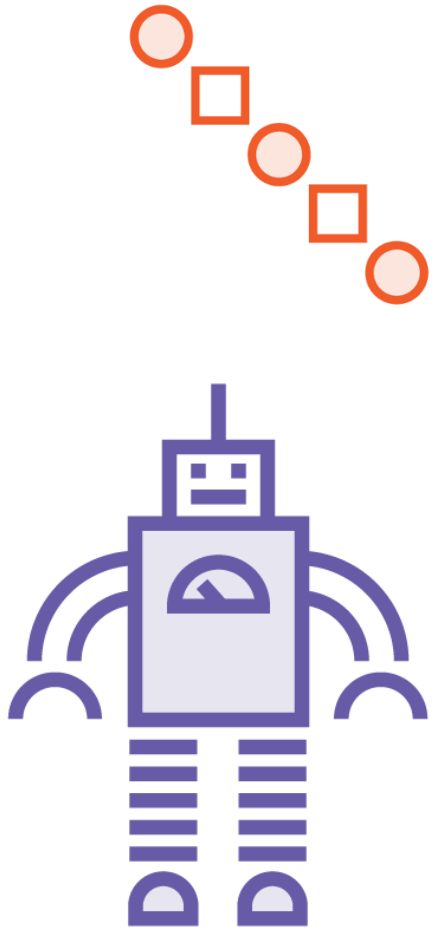
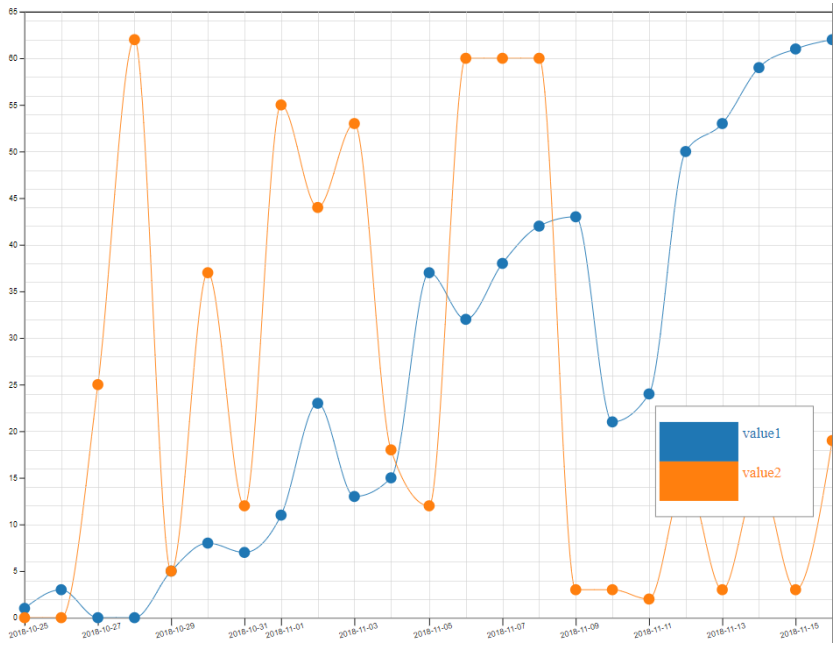
Getting Started

Data Visualization





How This Course Is Different

Usually, I lay out principles and illustrate them with a demo

But this isn't how people want to learn D3 – and it's not how I learned it, either

Continuous demos mixed with occasional principles

How the D3 Libraries are Organized

Prior to v4, one big monoblock

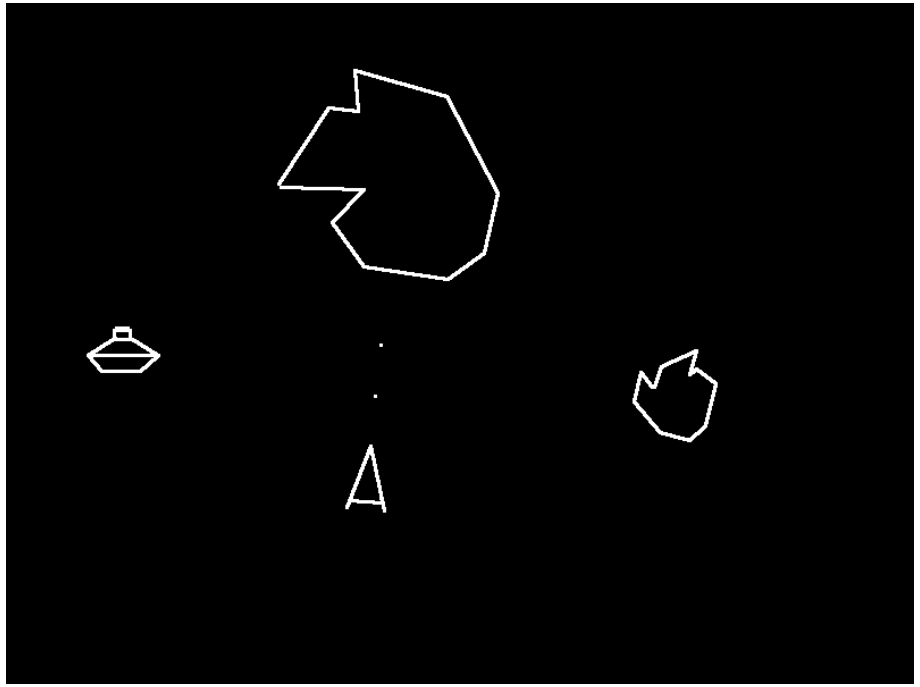
Version 4+ splits the libraries into one core and satellite assemblies

Many of which can be referenced independently

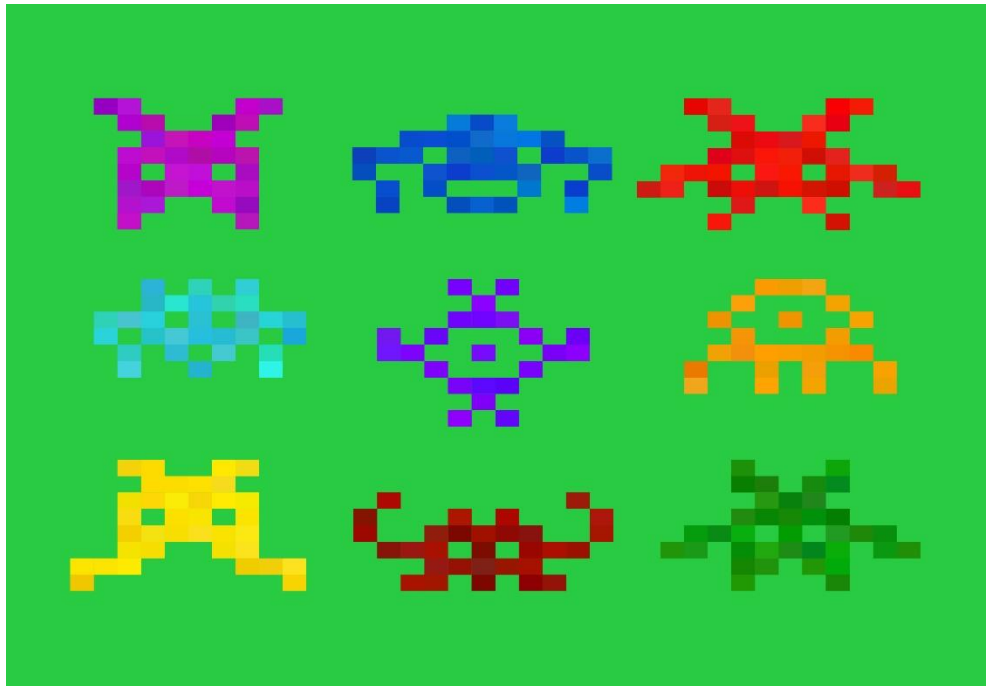
Unpacking Hello World

D3 is not a rendering engine

Graphics Rendering Methods

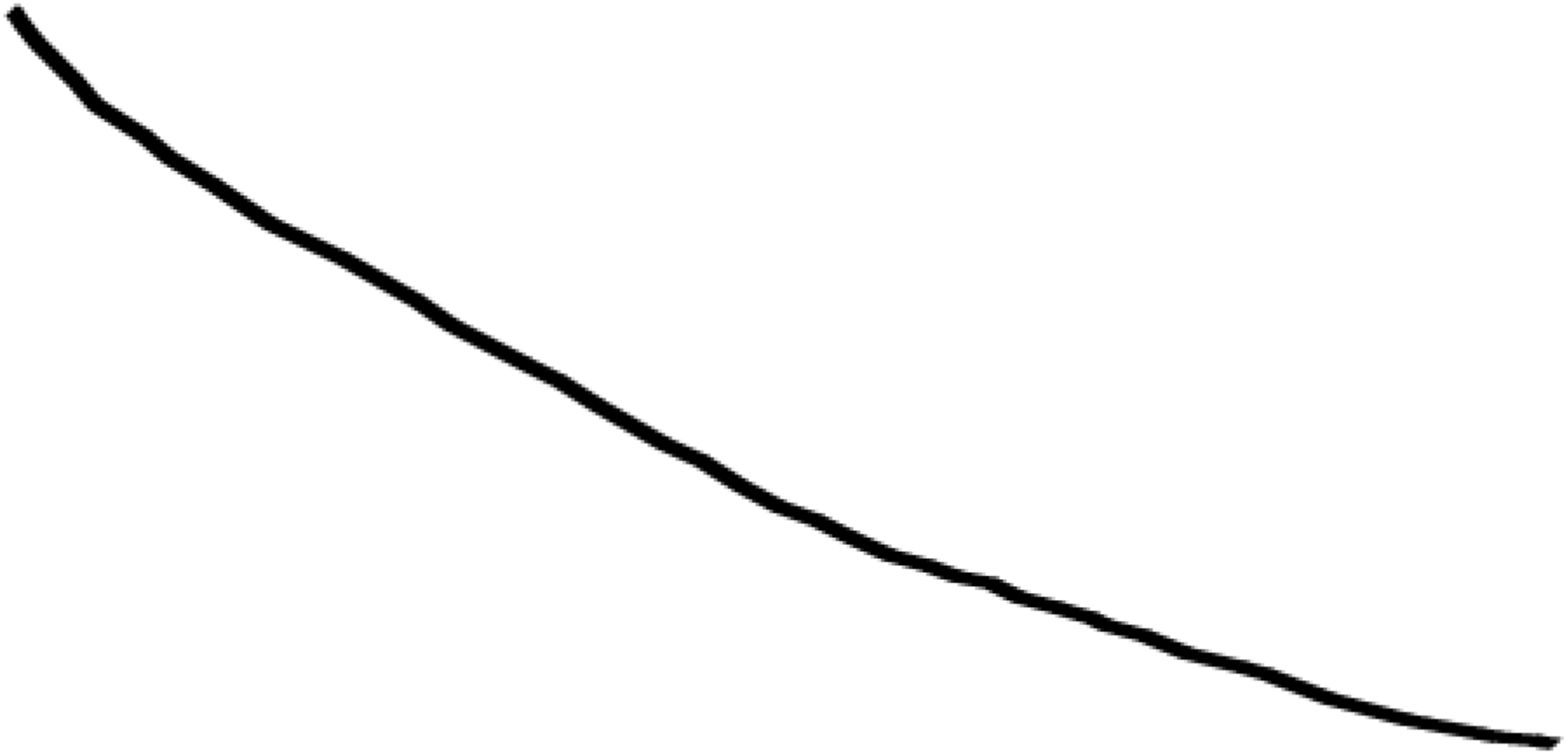


Vector



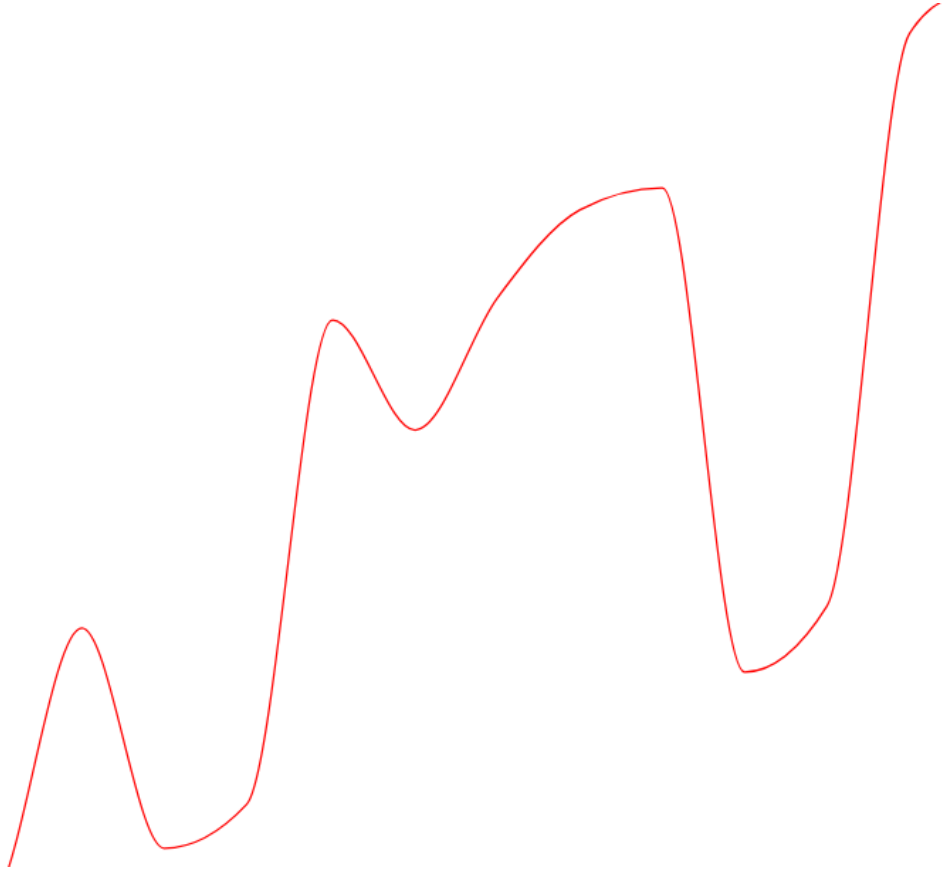
Raster

Raster

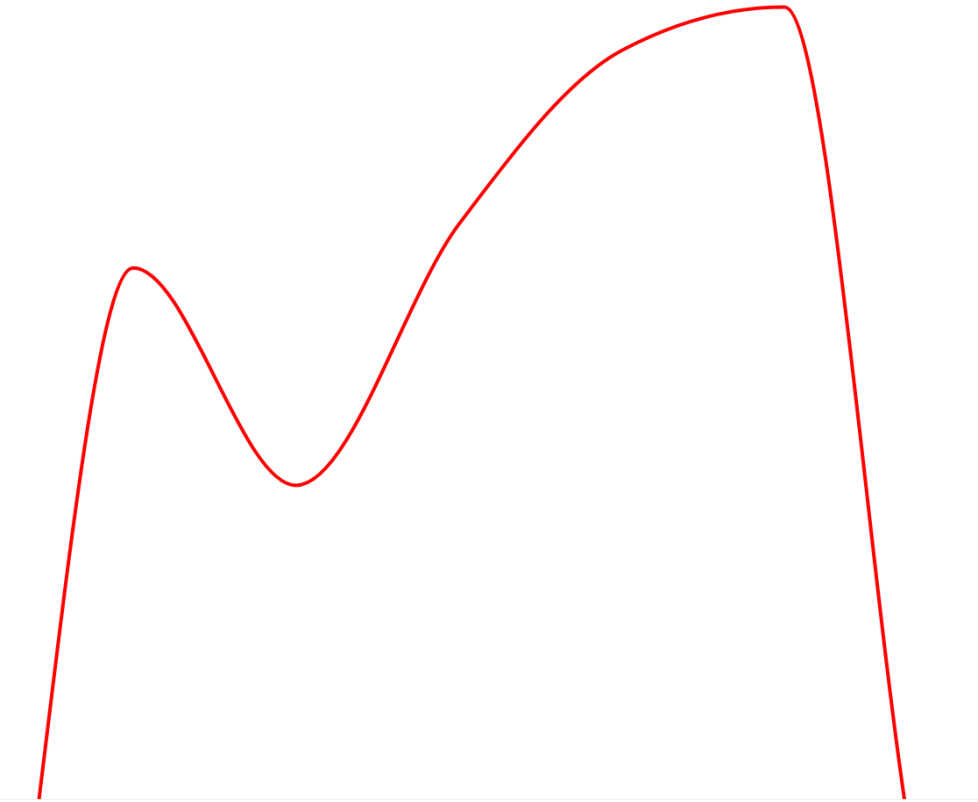


Raster - Zoomed

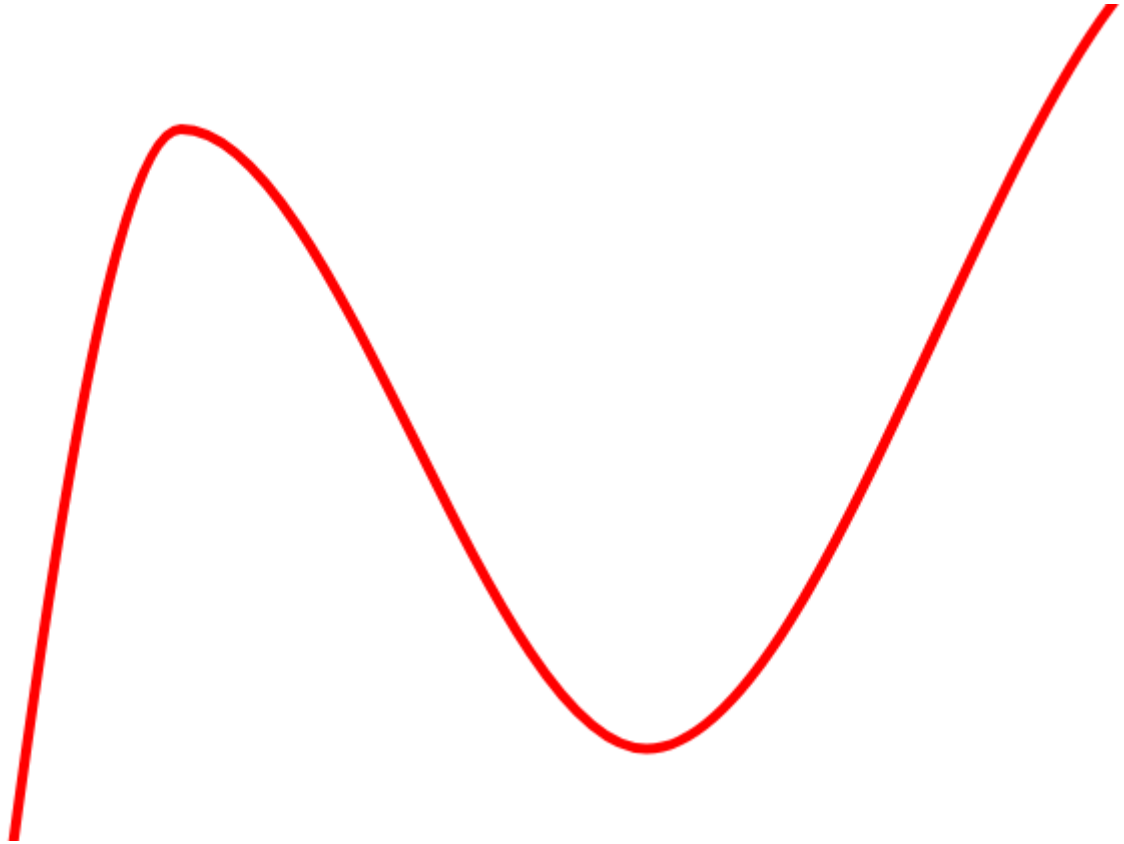
Vector



Vector - Zoomed



Vector – Zoomed Again



SVG Compatibility

Good compatibility that is ten years old

Worry when the tech is prior to IE9

Otherwise, SVG is pretty well-cooked

Our First REAL Data Visualization

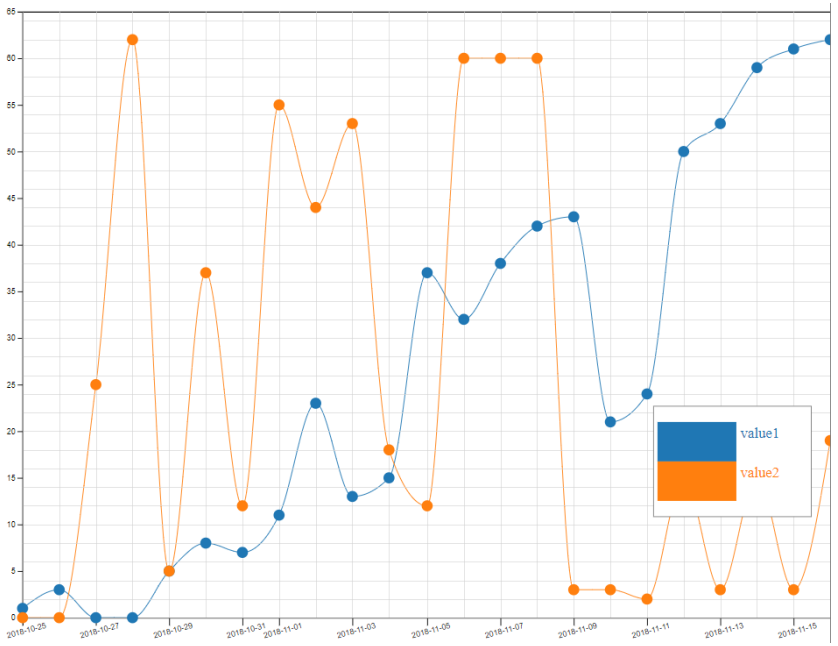
Start with the data

Our Dataset

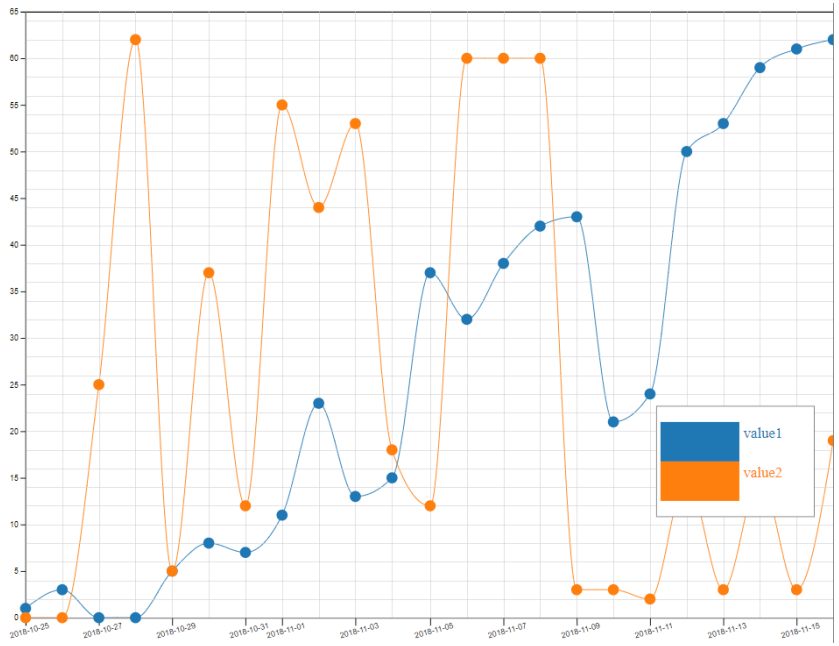
Sprint	BugCount
1	0
2	2
3	8
4	1
5	2

Transformation

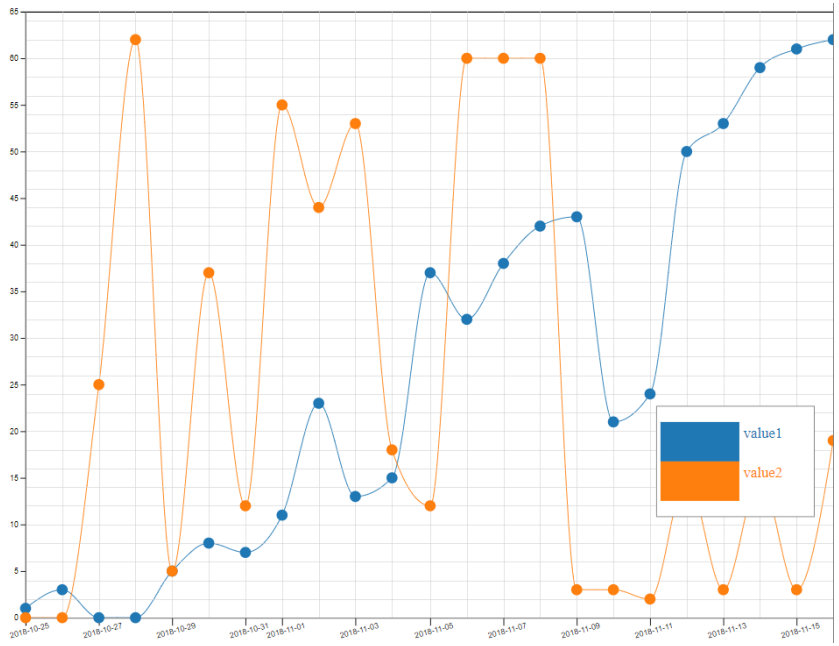
Translation



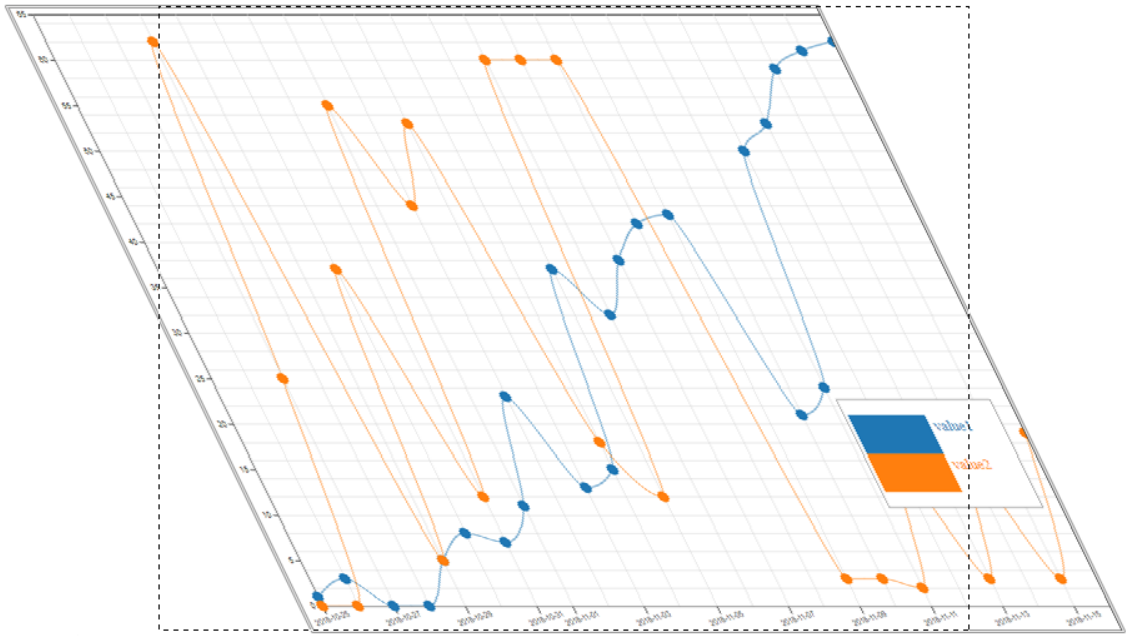
Rotation



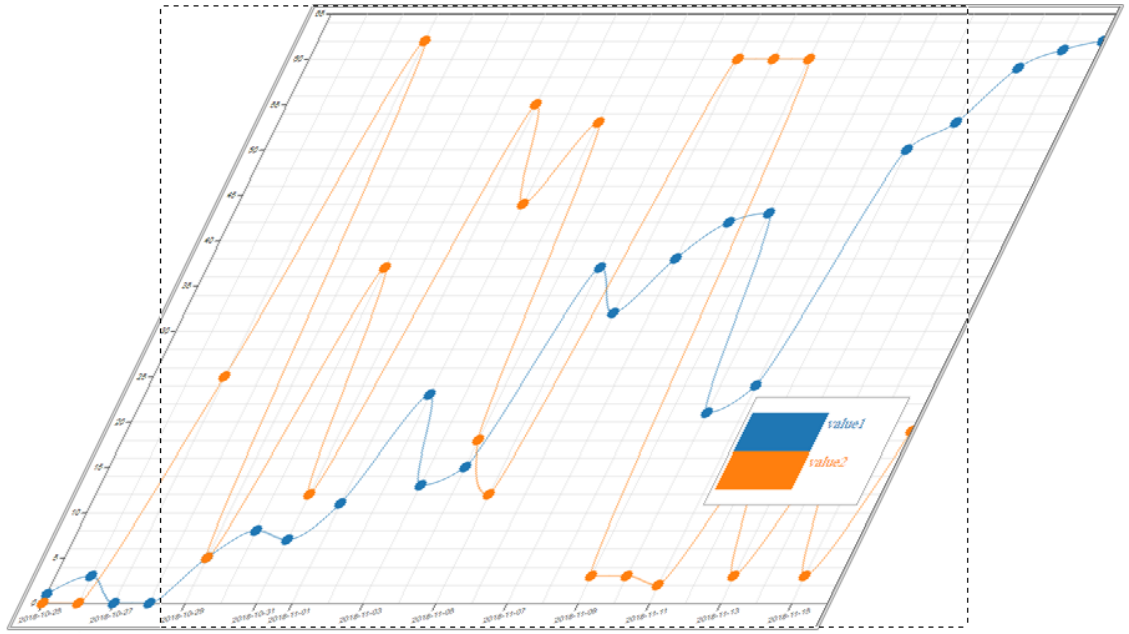
SkewX and SkewY



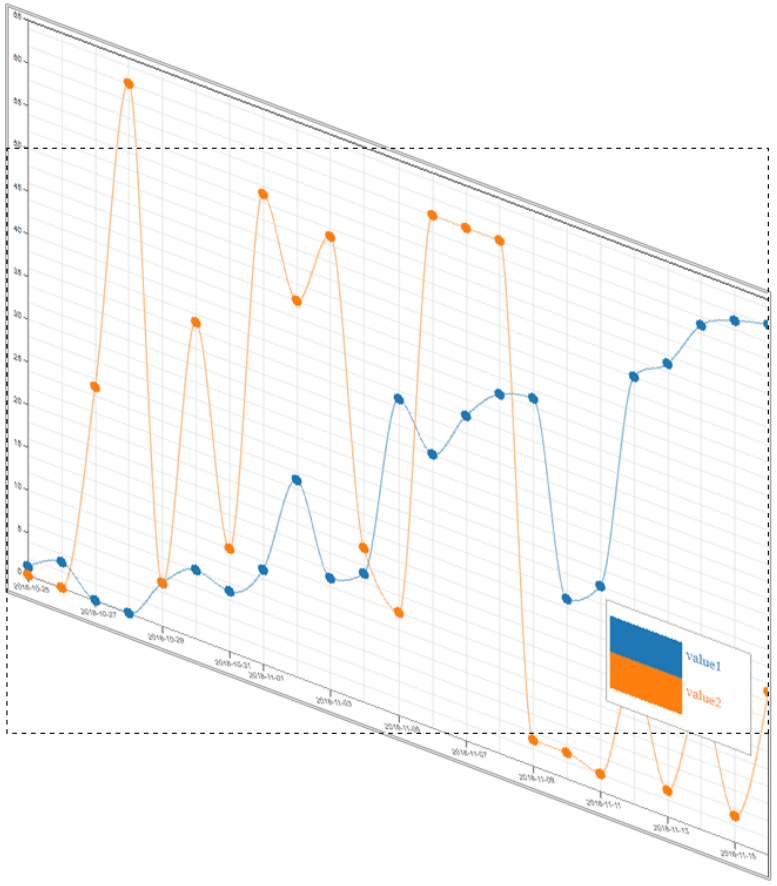
SkewX and SkewY



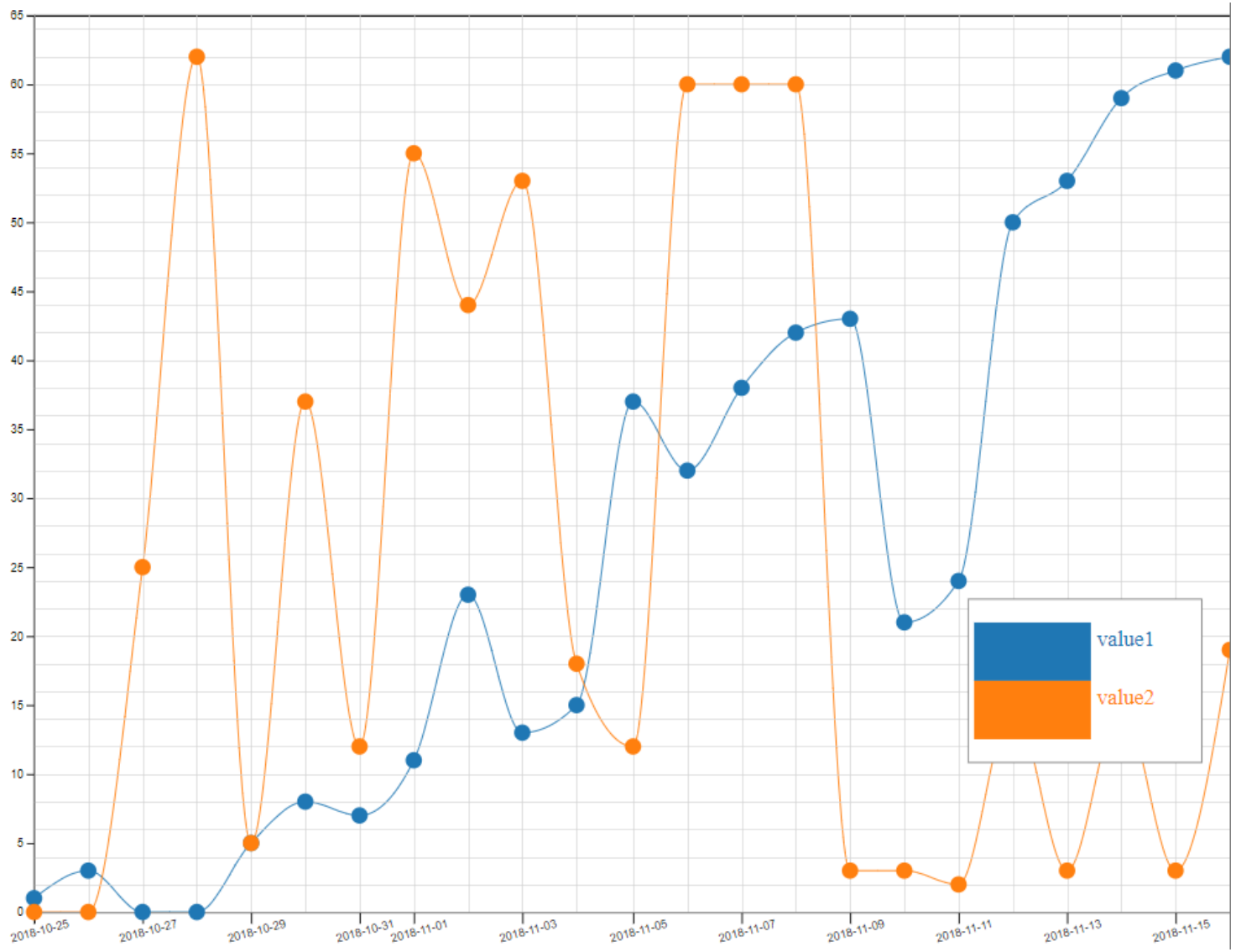
SkewX and SkewY



SkewX and SkewY



Scale

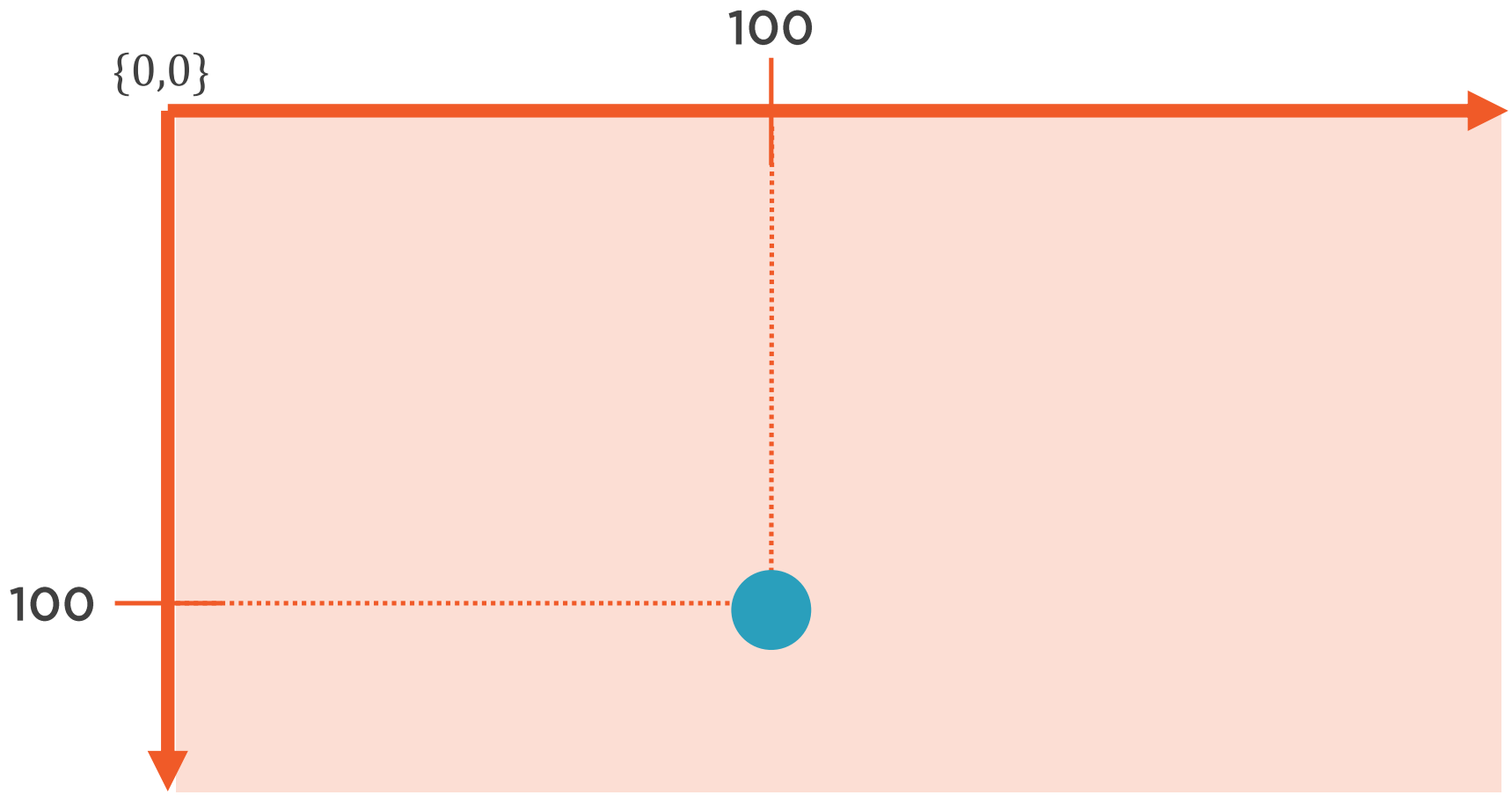

65
60
55
50
45
40
35
30
25
20
15
10
5
0
2018-10-25
2018-10-27
2018-10-29
2018-10-31
2018-11-01
2018-11-03
2018-11-05
2018-11-07
2018-11-09
2018-11-11
2018-11-13
2018-11-15
value1
value2

Matrix Transformation

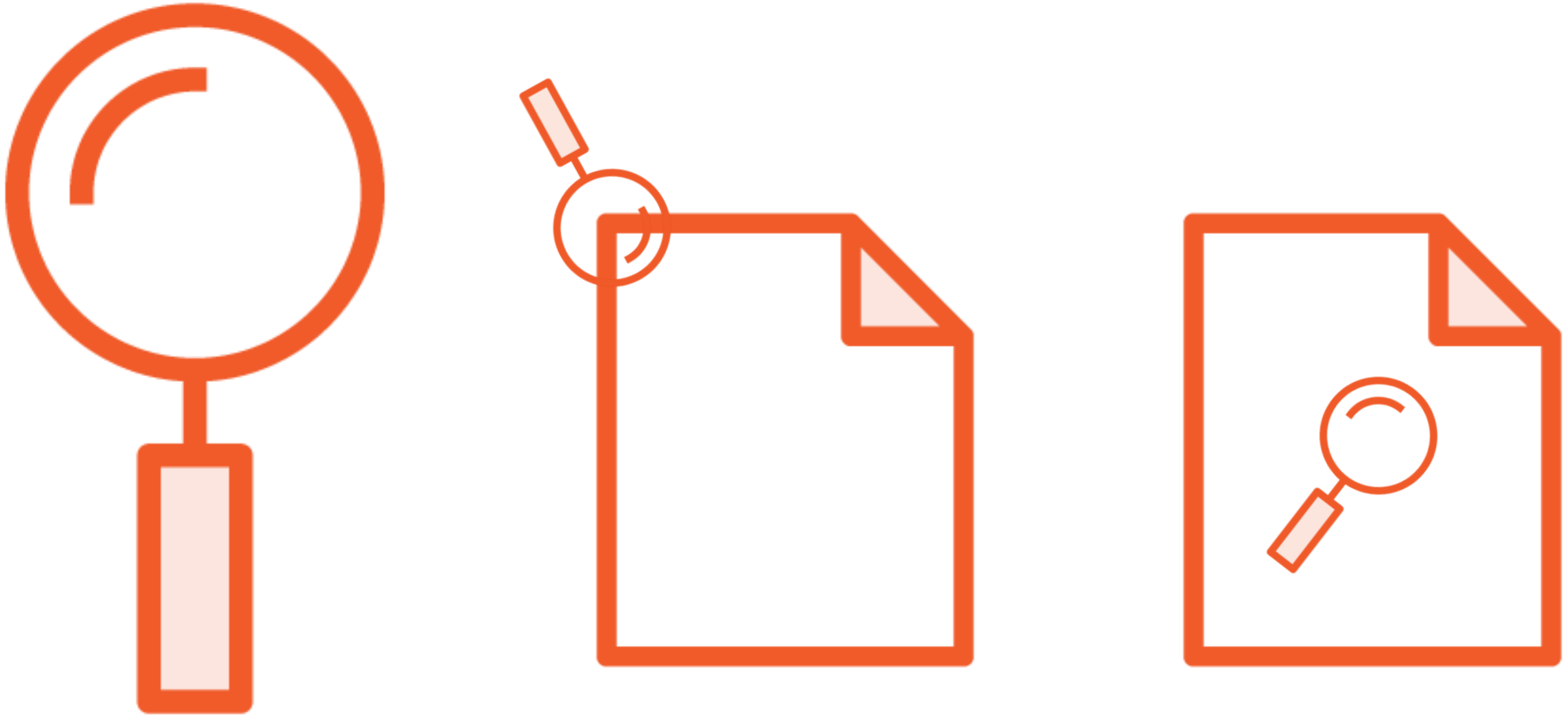
Multiple transformations at once

Most of the time, the simpler transformations are more useful

SVG Coordinates and Transforms



Transform Origins

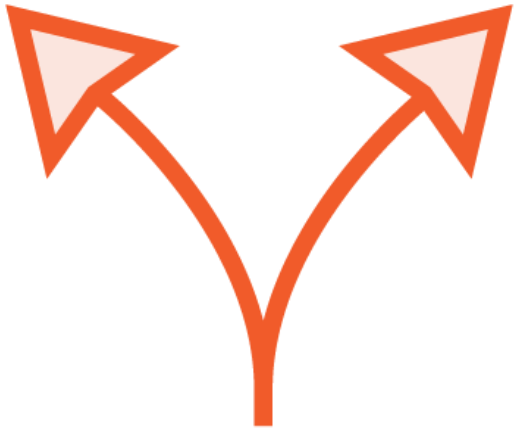


Getting Started with D3 and Data

This is a lot of trouble to generate a handful of circles

D3

Data Driven Documents



Keep the data separate

Summary

D3 is a Javascript library
- A core library
- With many satellite libraries
- Referenced via a CDN

D3 generates SVG
- Once generated, that SVG is entirely detachable from D3

SVG is a vector format
- with wide, deep, and **old** support
- In all major browsers

We can draw graphics primitives with SVG
- Text
- Circles
- Rectangles

We can represent *data* with SVG primitives
- With circles using radius
  - Or, the square root of radius to preserve proportionality
- Height or width on rectangles

We can perform transformations on SVG elements
- Like Scale and Rotate
- Transforms are performed from a transform origin
  - Which is, by default, the center of the canvas
  - We can take control of it
    - With the transform-origin attribute