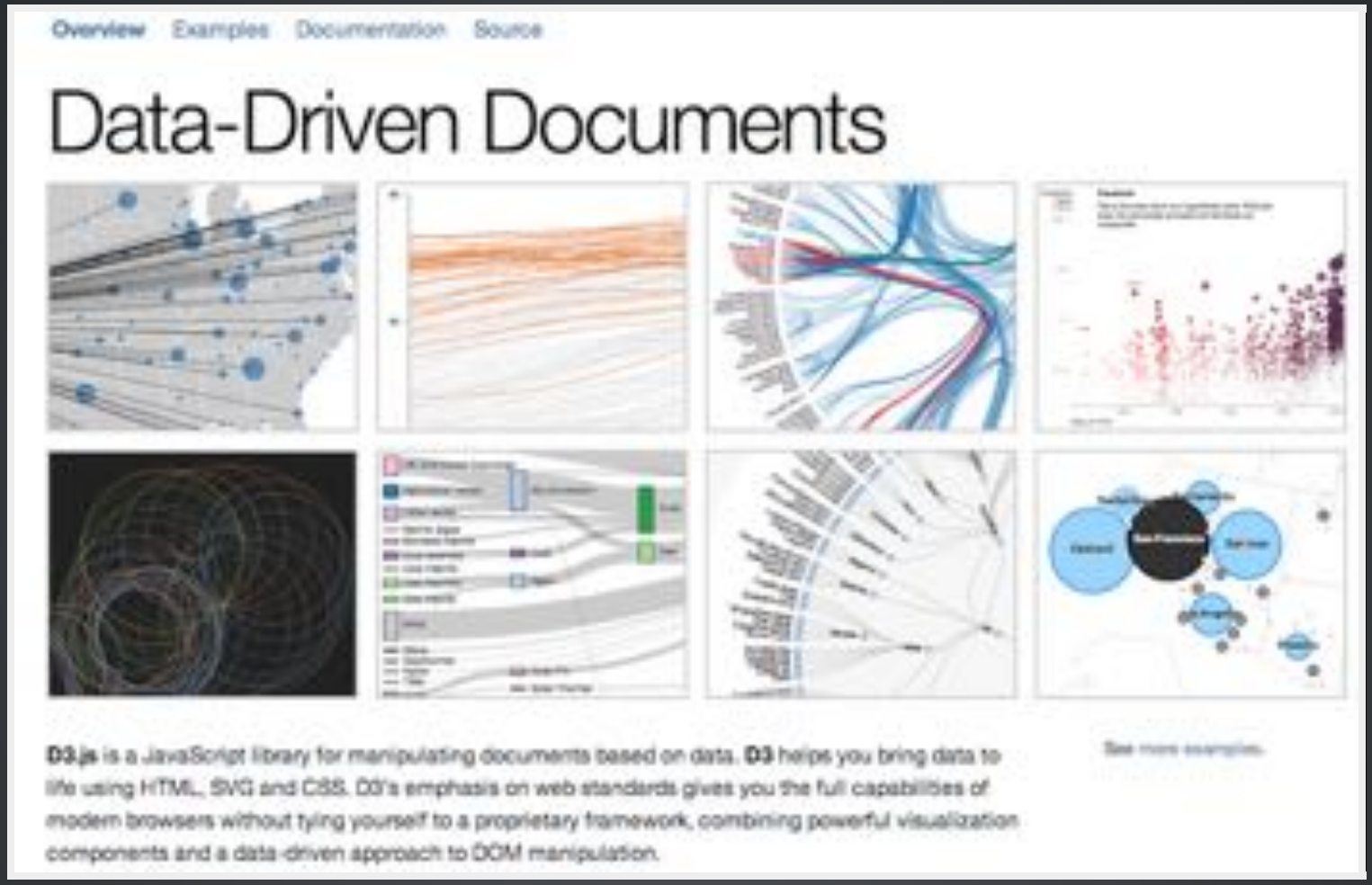
DATA-DRIVEN DOCUMENTS

VISUALIZING LIBRARY DATA WITH D3.JS

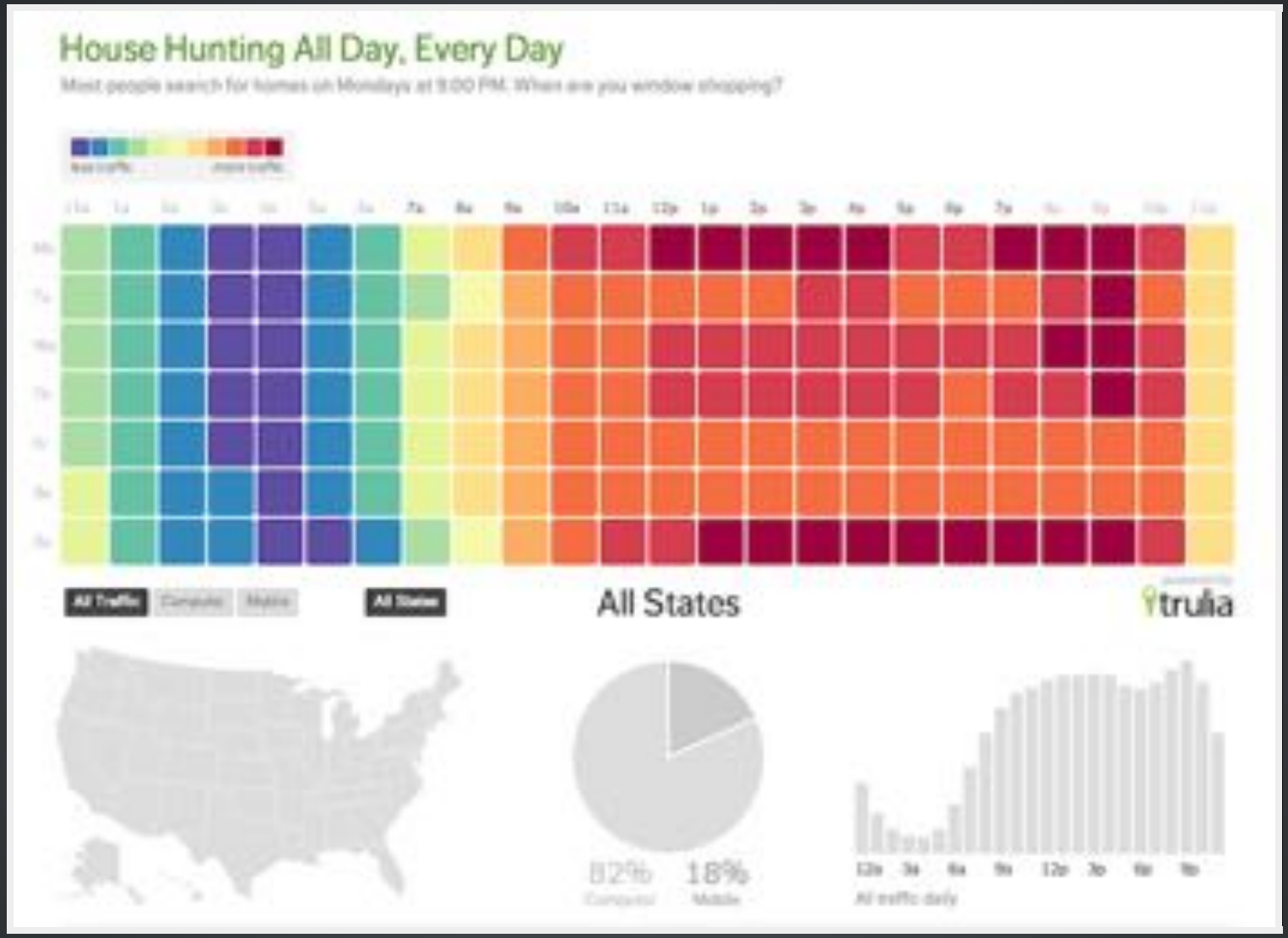
Bret Davidson | NCSU Libraries


Overview Examples Documentation Source
Data-Driven Documents
D3.js is a JavaScript library for manipulating documents based on data. D3 helps you bring data to life using HTML, SVG and CSS. D3's emphasis on web standards gives you the full capabilities of modern browsers without tying yourself to a proprietary framework, combining powerful visualization components and a data-driven approach to DOM manipulation.

D3.js

AGENDA

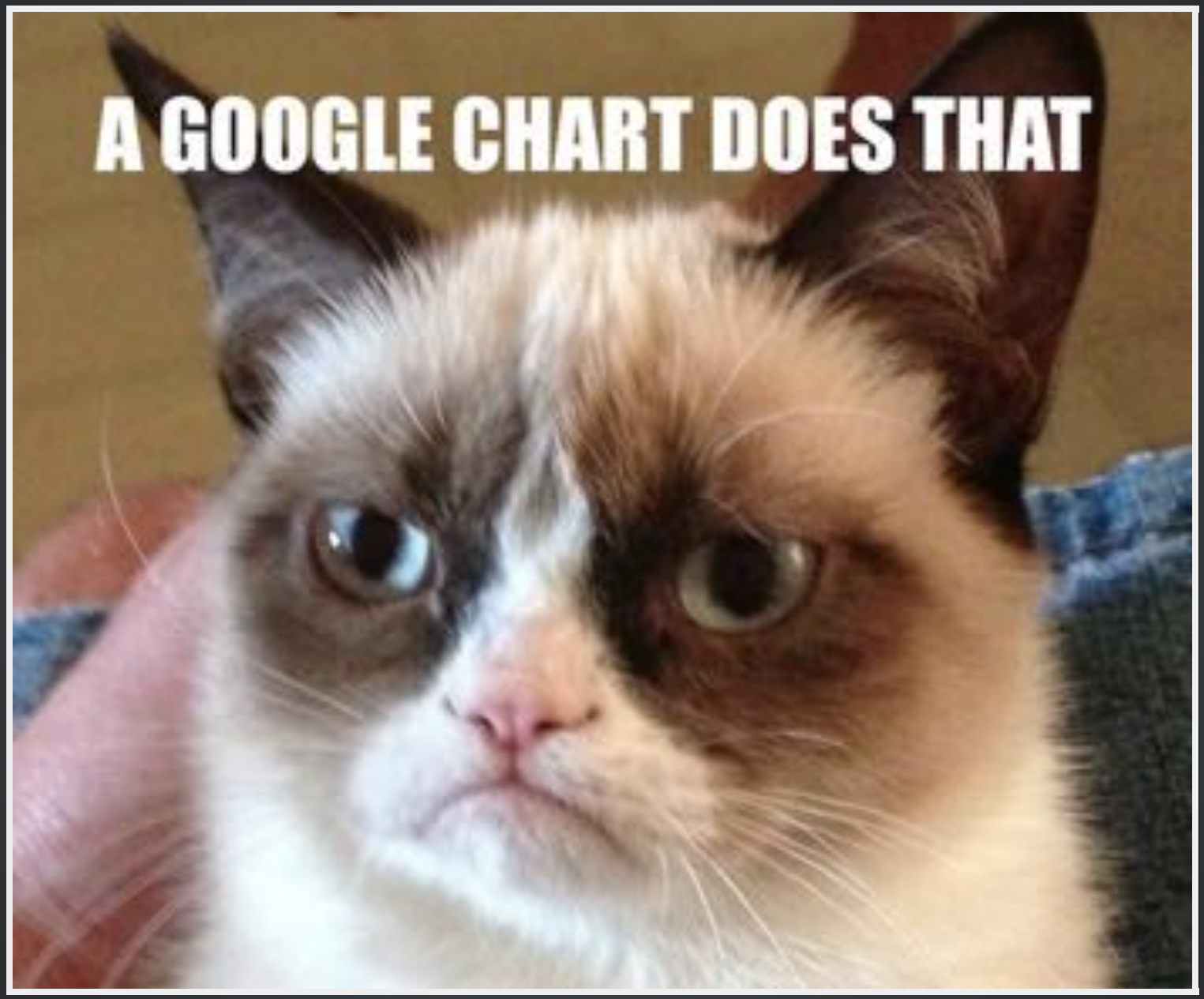
Example
Why D3?
Data Join
API Highlights
D3 @ NCSU
Resources



Trulia Trends

WHY D3?

Web Standards
Capability
Community


A GOOGLE CHART DOES THAT

WHY NOT D3?

Learning Curve
Lower Level
Simpler Needs

EXAMPLE

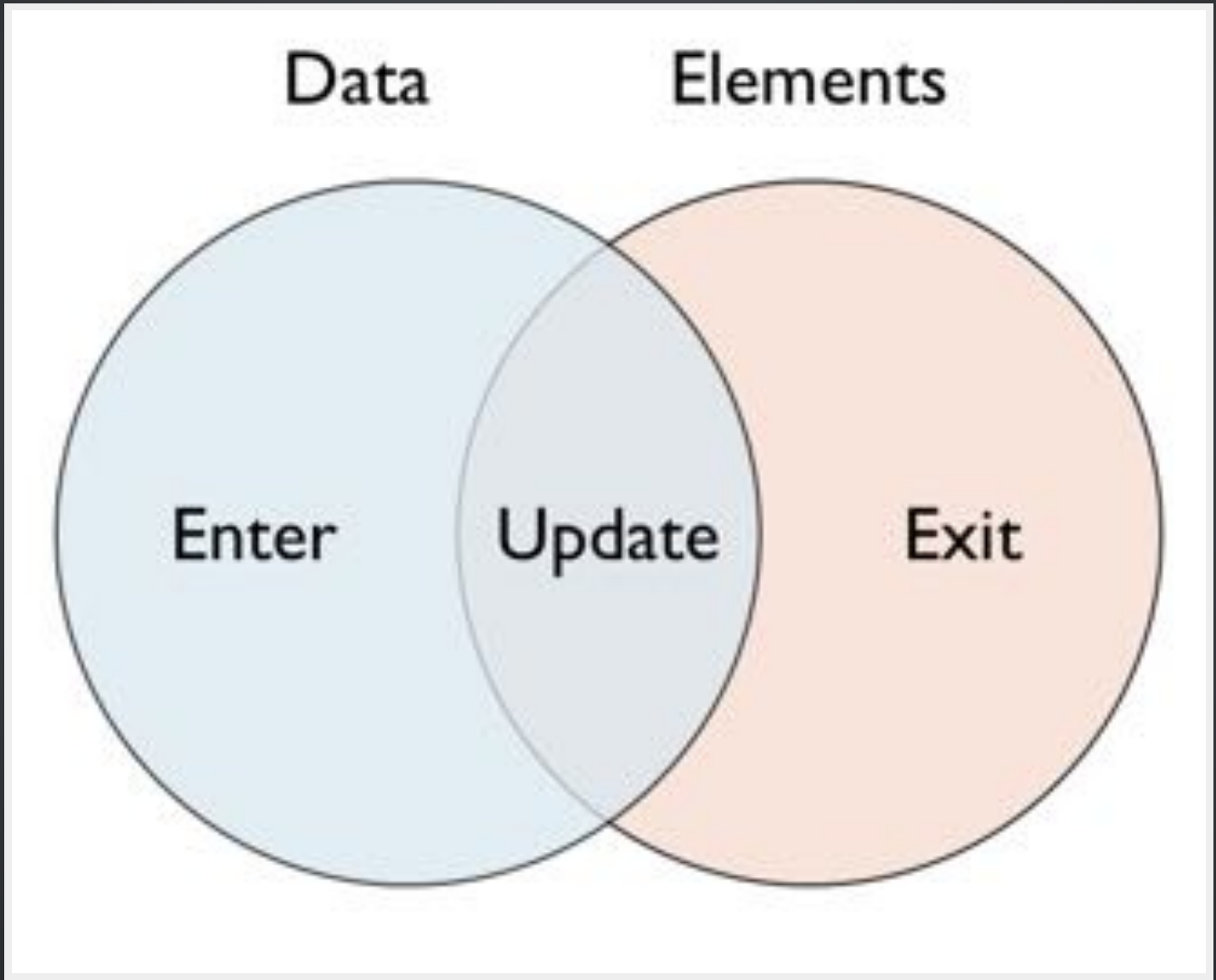
```
var dataset = [20, 5, 10, 0, 50];

d3.select('body')
  .selectAll('p') // selection
  .data(dataset)  // data binding
  .enter()        // create enter selection
  .append('p')    // dom manipulation
  .style('font-size', '50px') // static property
  .text(function (d, i) {     // dynamic property
        return i + ': my value is ' + d;
  });
```

OUTPUT

```
0: my value is 20
1: my value is 5
2: my value is 10
3: my value is 0
4: my value is 50
```

DATA JOIN



DATA JOIN DEMO

Demo

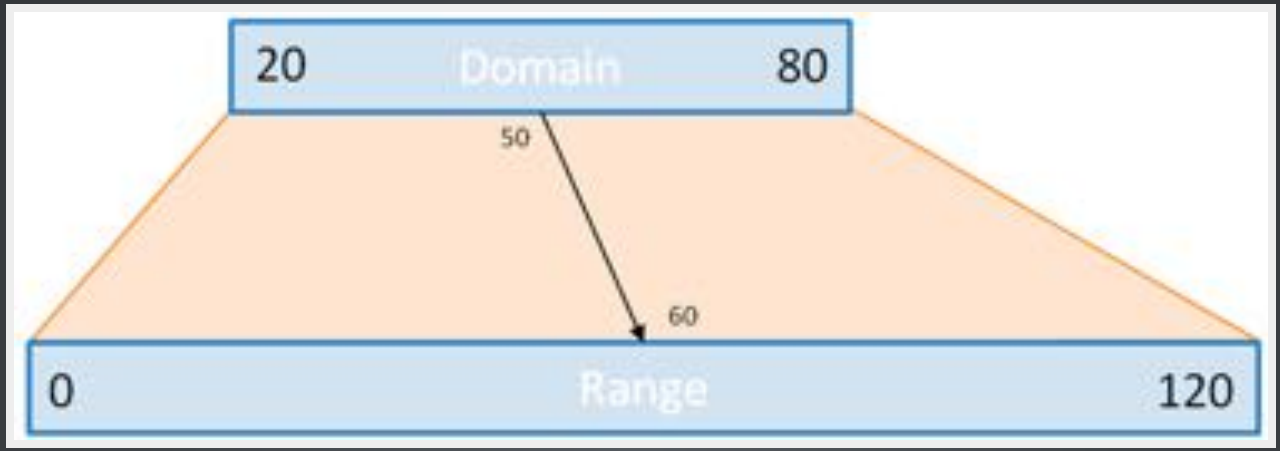
ENTER + UPDATE + EXIT

```
// Enter
rects.enter()
    .append('rect');

// Update
rects.attr('x', 20)
    .attr('y', function (d, i) {return 65 * i;})
    .attr('height', '60' )
    .attr('width', function(d, i) {return x(d);});

// Exit
rects.exit()
    .remove();
```

LINEAR SCALE



LINEAR SCALE

```
var fontSize = d3.scale.linear()
                 .domain([0, d3.max(dataset)])
                 .range([25, 50]);
```

ARRAY METHODS

```
d3.max(array[, accessor]);
d3.min(array[, accessor]);

d3.extent(array[, accessor]);

d3.sum(array[, accessor]);
d3.mean(array[, accessor]);
d3.median(array[, accessor]);

d3.range([start, ]stop[, step]);

d3.nest()
  .key(function(d) { return d.school })
  .entries(array);
```

OTHER SCALES

power()
log()
quantize()
quantile()
threshold()
ordinal()
time()

SVG GENERATORS

Area
Line
Chord
Diagonal
Symbol

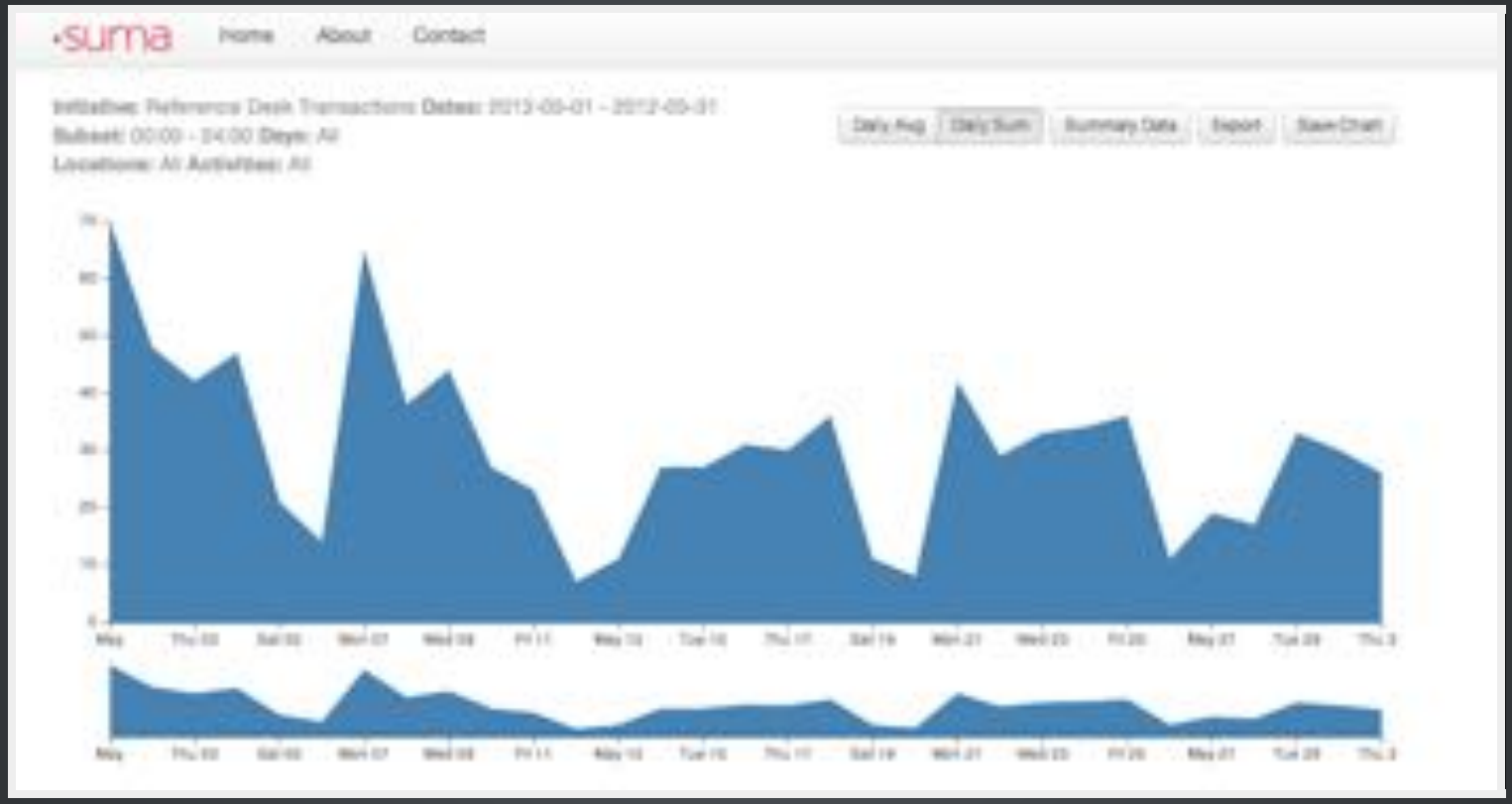
LAYOUTS

Force
Hiearchy
Histogram
Pack
Treemap

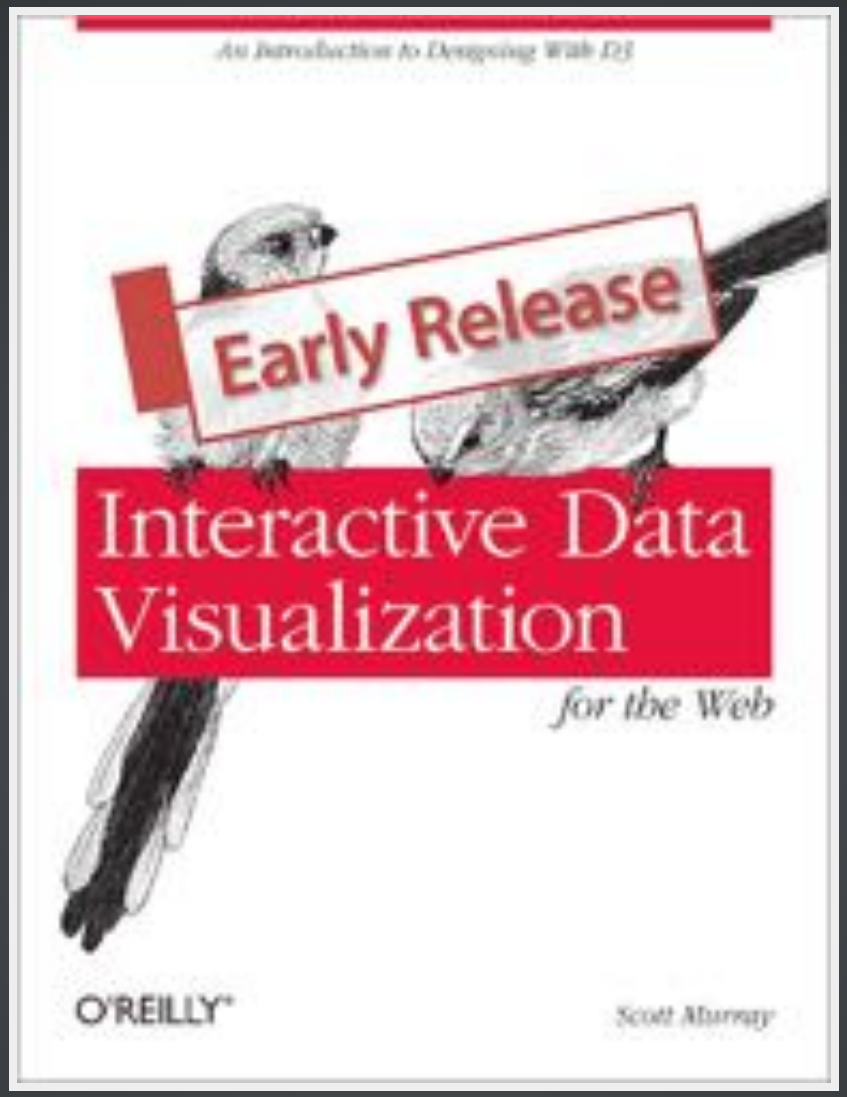
AND MORE!

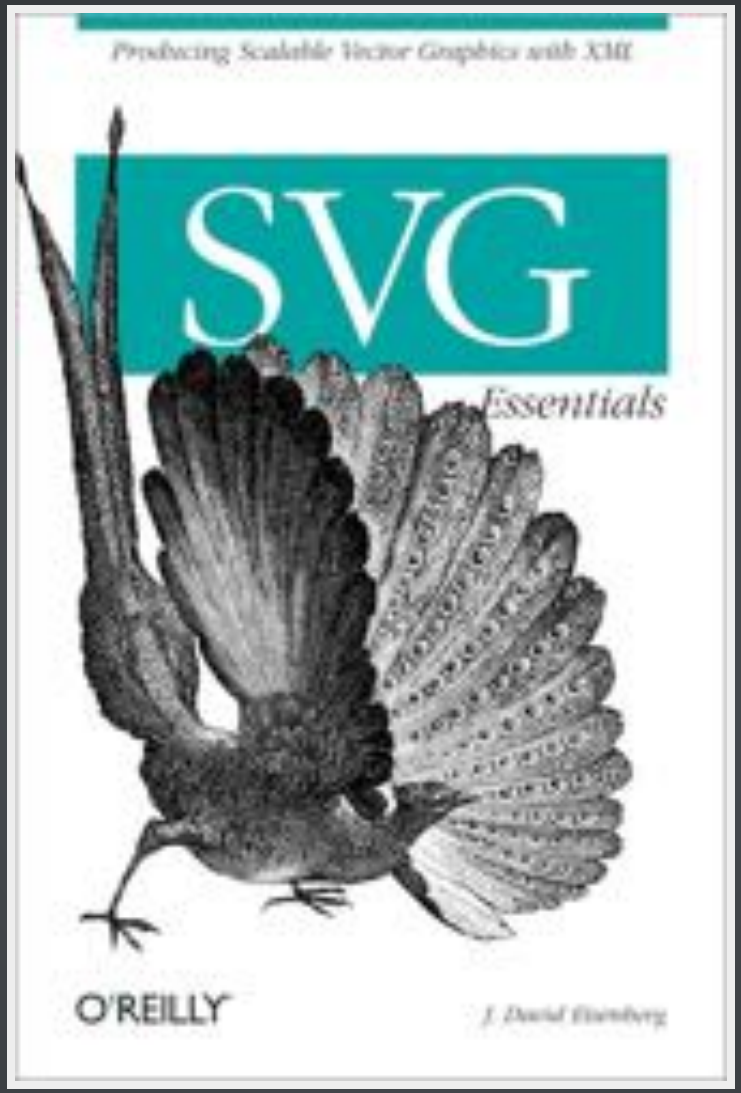
Axes
Transitions
Color Scales
Formatting
Geography

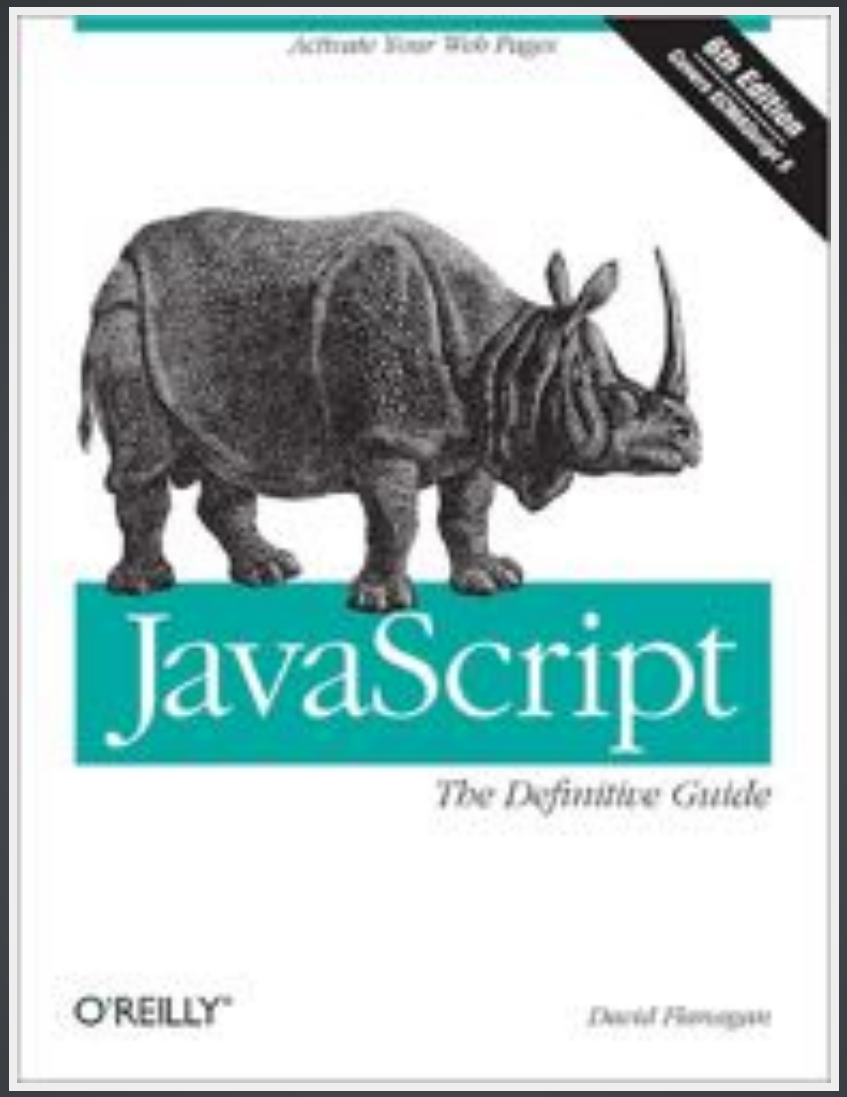
D3 @ NCSU

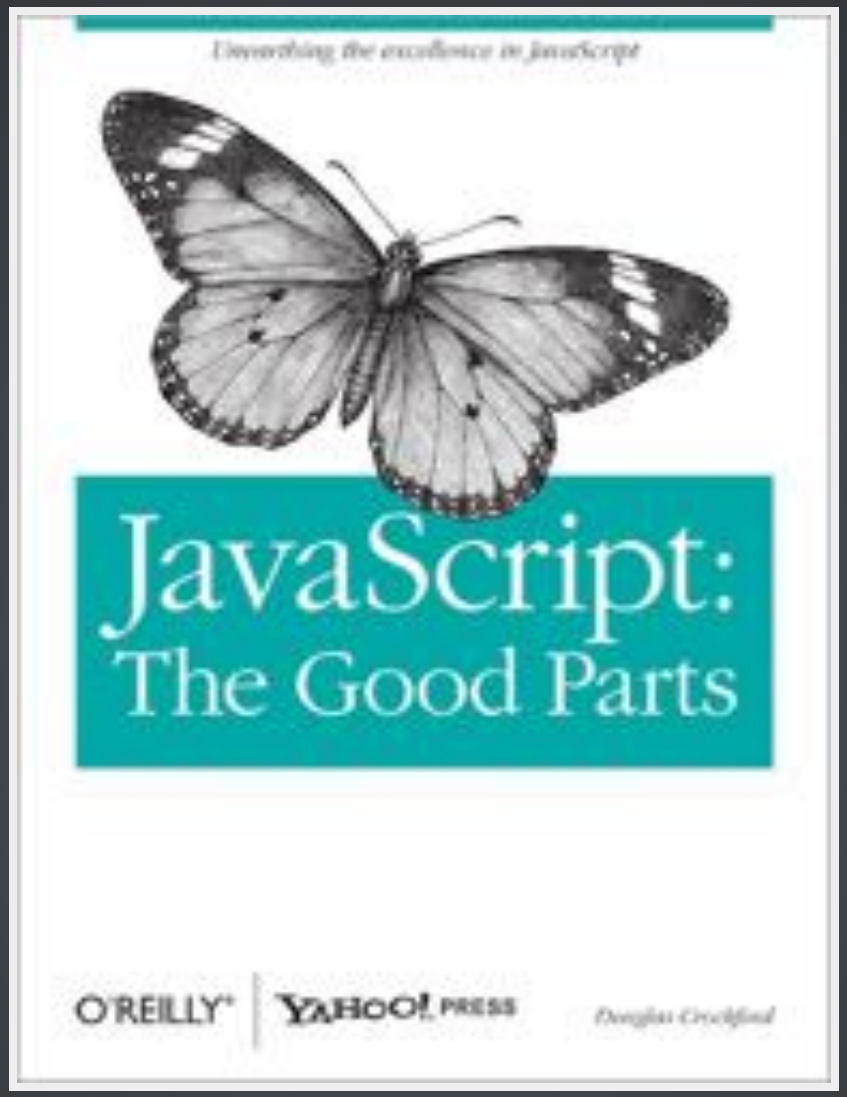


lib.ncsu.edu/dli/projects/spaceassesstool


An Introduction to Designing With D3
Early Release
Interactive Data Visualization
for the Web
O'REILLY
Scott Murray


Producing Scalable Vector Graphics with XML
SVG
Essentials
O'REILLY
J. David Eisenberg


Activate Your Web Pages
6th Edition
JavaScript
The Definitive Guide
O'REILLY
David Flanagan


Unearthing the excellence in JavaScript
JavaScript:
The Good Parts
O'REILLY
YAHOO! PRESS
Douglas Crockford

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lib.ncsu.edu/dli/projects/spaceassesstool

THANK YOU!

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