Lab 7

D3.js (Part II)

March 7, 2013 – Michael Porath (@poezn)

Assignment 4

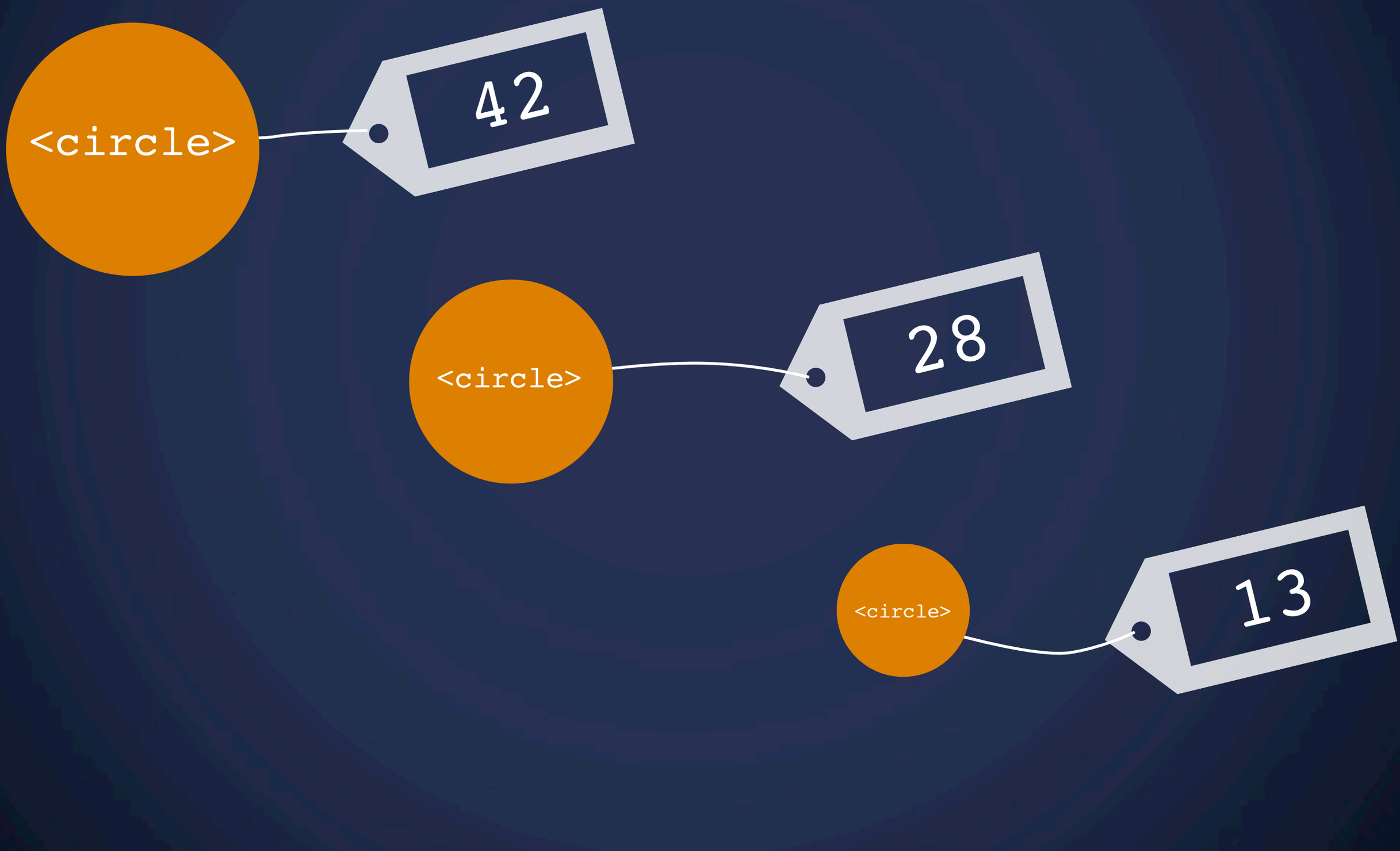
- get started EARLY!
- include data at least through March 12.
- leave time to iterate. Show iterations
- No files in a proprietary format (including Word, Pages, Illustrator, etc.)
- Get feedback!
- We're here to help
- Have a look at updated A4 guidelines for more info

Data Binding

each <element> has a datum "attached"

Data Binding

Data Driven Attributes. Here: radius



Your Turn

Let’s try this

First example

Re-creating the OK Cupid color matrix with D3.js

Reply Rate By Race

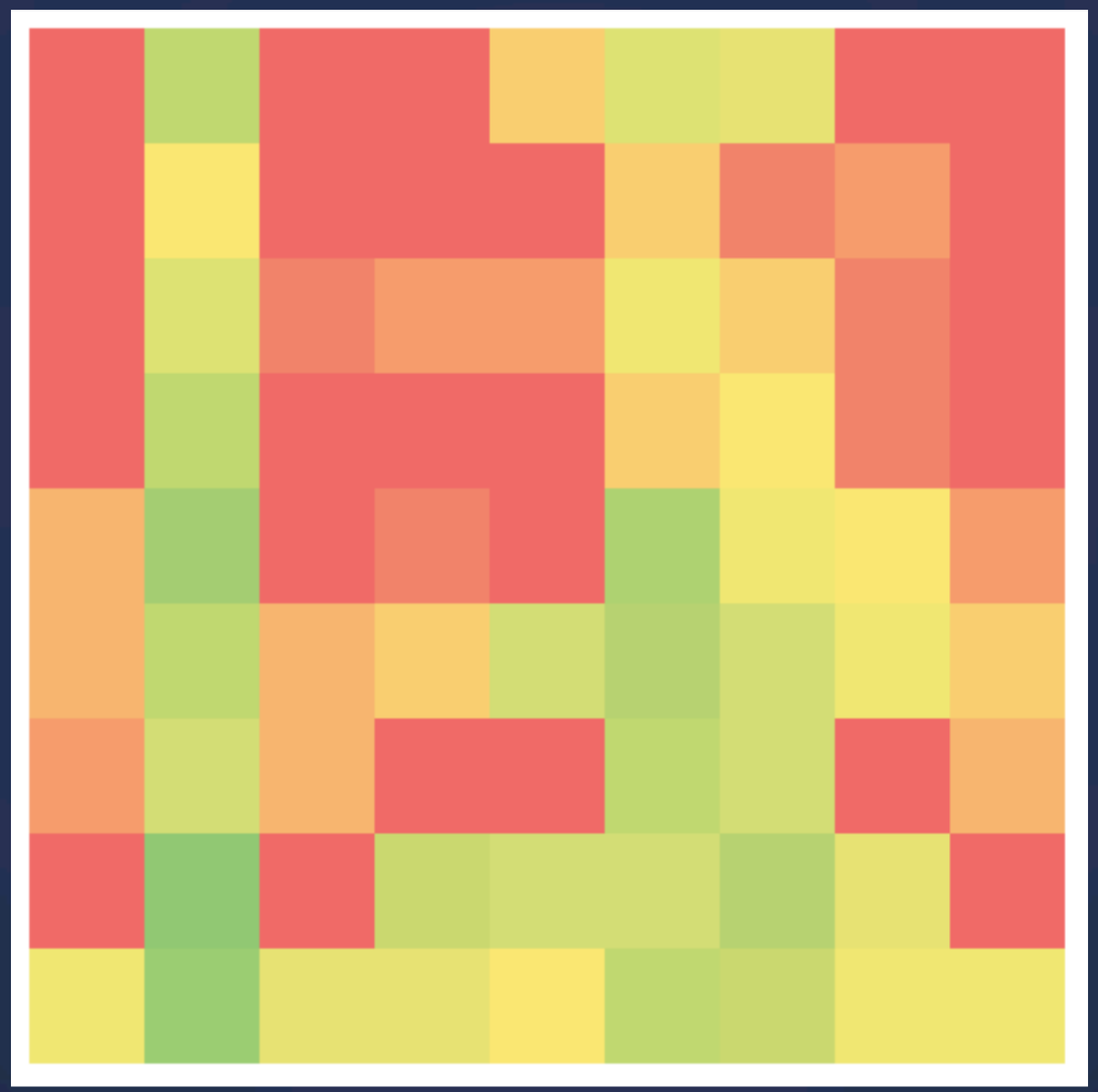
male sender

	Asian - Female	Black - Female	Hispanic/Latin - Female	Indian - Female	Middle Eastern - Female	Native American - Female	Other - Female	Pacific Islander - Female	White - Female	
Asian - Male	22	34	22	18	27	31	30	23	21	22.2
Black - Male	17	28	19	21	21	27	24	25	21	21.7
Hispanic/Latin - Male	20	31	24	25	25	29	27	24	22	23.1
Indian - Male	20	34	19	18	23	27	28	24	20	20.8
Middle Eastern - Male	26	37	23	24	23	36	29	28	25	25.7
Native American - Male	26	34	26	27	32	35	32	29	27	27.8
Other - Male	25	32	26	21	23	34	32	22	26	26.8
Pacific Islander - Male	21	39	21	33	32	32	35	30	23	24.6
White - Male	29	38	30	30	28	34	33	29	29	29.2
	25.7	34.1	27.1	25.1	27.0	33.0	31.4	27.0	27.3	**27.6**

http://blog.okcupid.com/index.php/your-race-affects-whether-people-write-you-back/

First example

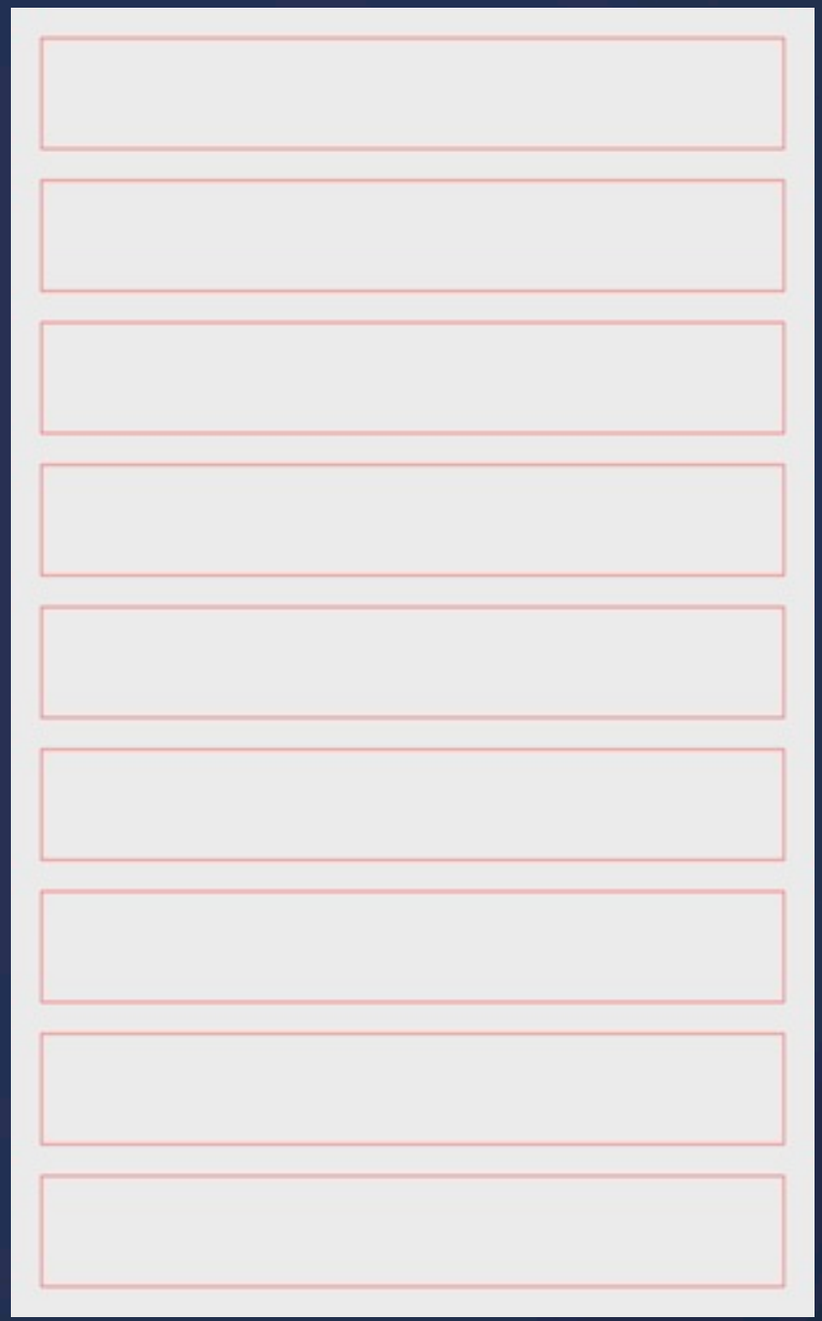
Re-creating the OK Cupid color matrix with D3.js



Make a Plan

Let’s make a concept up front

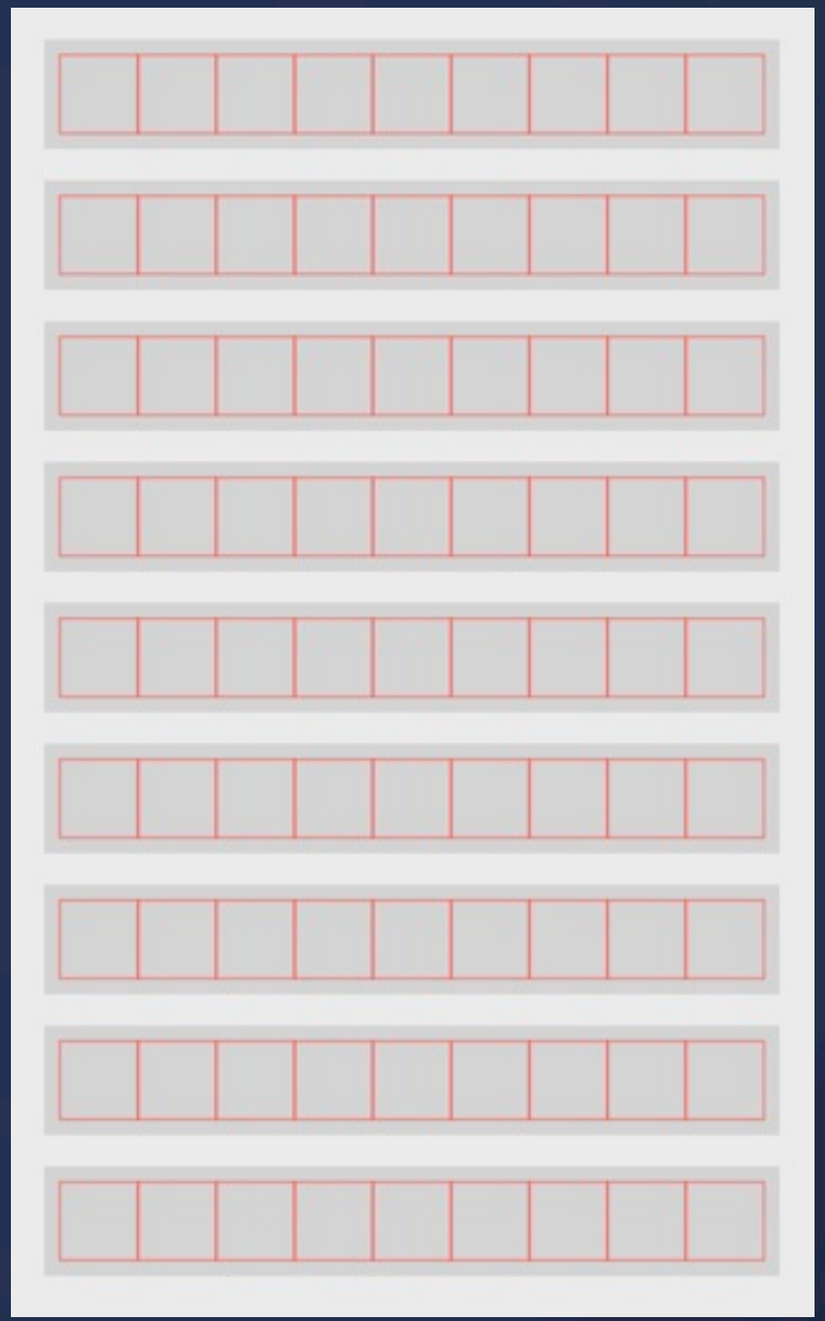
9 rows



Make a Plan

Let’s make a concept up front

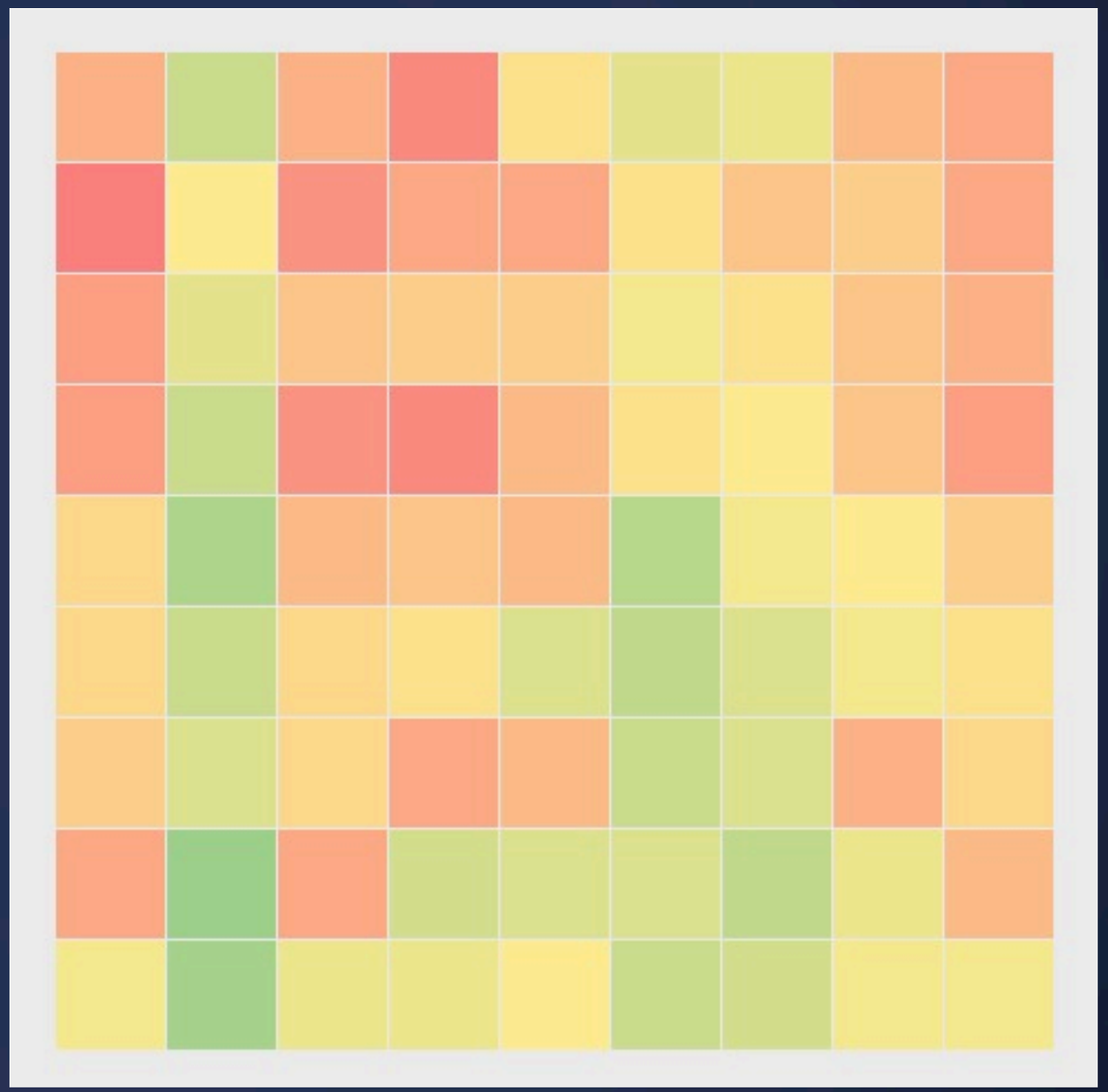
9 squares
per row



Make a Plan

Let’s make a concept up front

fill the squares with the right color



Exercise 1

Draw the squares

Tributary ? INFO 247 - Lab 7 - #1 by poezn Save Fork Michael Porath Log out

inlet.js × matrix-data.json × +

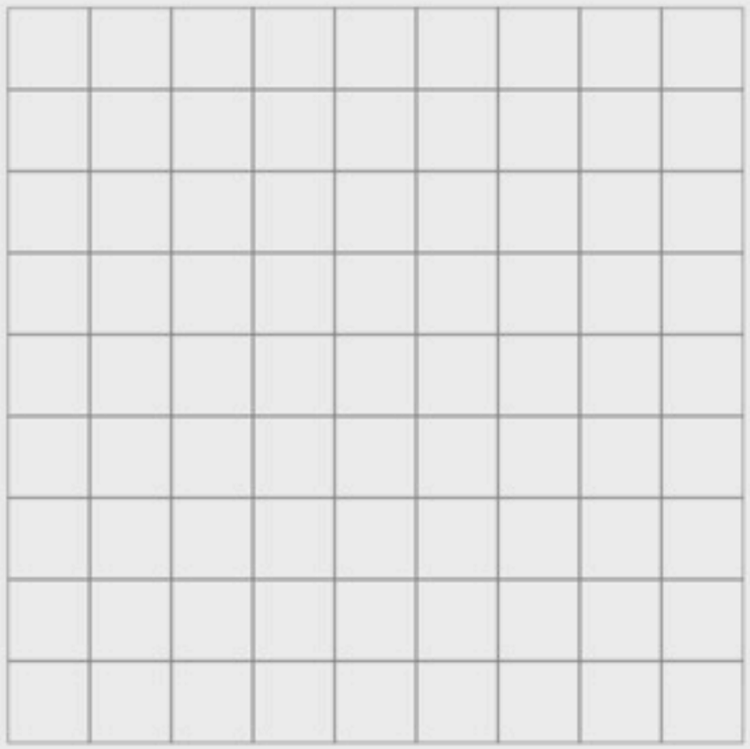
```
1  // School of Information, UC Berkeley
2  // INFO 247 Lab 7: D3.js
3  // http://blogs.ischool.berkeley.edu/i247s13/lab-7-d3-js-part-2/
4
5  // get the data from the 'matrix-data.json' data file
6  var data = tb['matrix-data'];
7
8
9  // for each race, let's add a row that will eventually
10 // contain all squares for that particular race.
11 // We're using the SVG <g> element for this. <g> elements
12 // are invisible but can be moved around on the screen
13
14 var rows = g.selectAll("g.row")
15 .data(data)
16 .enter().append("g")
17 .attr({
18   "class": "row",
19   "transform": function(d, i) {
20     var tx = 50;
21     var ty = 50 + i * 50;
22     return "translate(" + [tx, ty] + ")"
23   }
24 });
25
26
27 // within each of these rows, let's add 9 squares (one for
28 // each data point)
29
30 rows.selectAll("rect")
31 .data(function(d, i) { return d.values; })
32 // ... YOUR TURN.
33 // - append a rectangle for each data point
34 // - move each rectangle to appeach 50 pixels next to the previous one
35 // - set a stroke in order to distinguish the rectangles from each other
36
37
```

http://tributary.io/inlet/5054734

Exercise 1

Draw the squares (full code)

Tributary ? INFO 247 - Lab 7 - #1 - Draw Sq by poezn Save Fork Michael Porath Log out



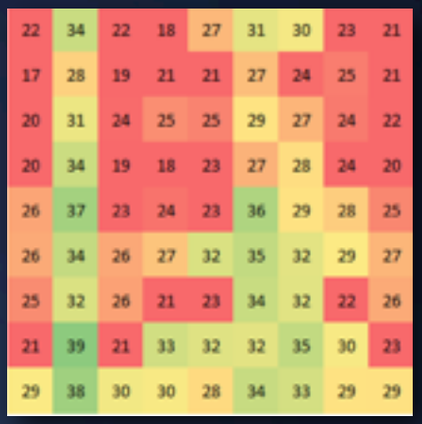
inlet.js × matrix-data.json × +

```
// get the data from the 'matrix-data.json' data file
var data = tb['matrix-data'];

// for each race, let's add a row that will eventually
// contain all squares for that particular race.
// We're using the SVG <g> element for this. <g> elements
// are invisible but can be moved around on the screen

var rows = g.selectAll("g.row")
.data(data)
.enter().append("g")
.attr({
  "class": "row",
  "transform": function(d, i) {
    var tx = 50;
    var ty = 50 + i * 50;
    return "translate(" + [tx, ty] + ")"
  }
});

// within each of these rows, let's add 9 squares (one for
// each data point)

rows.selectAll("rect")
.data(function(d, i) { return d.values; })
.enter().append("rect")
.attr({
  "x": function(d, i) {
    return i * 50;
  },
  "y": 0,
  "width": 50,
  "height": 50
})
.style({
  "fill": "none",
  "stroke": "#747474"
});
```

http://tributary.io/inlet/5054769

Color Scales

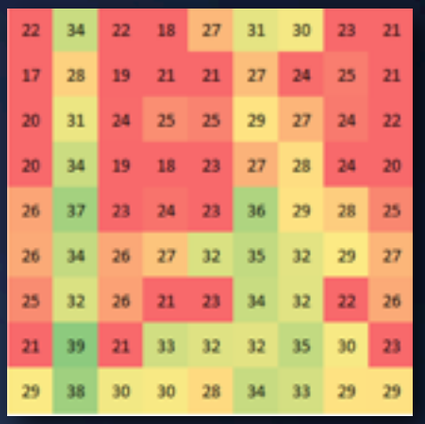
How?



... 23 ... 29 ... 34 ...

Color Scales

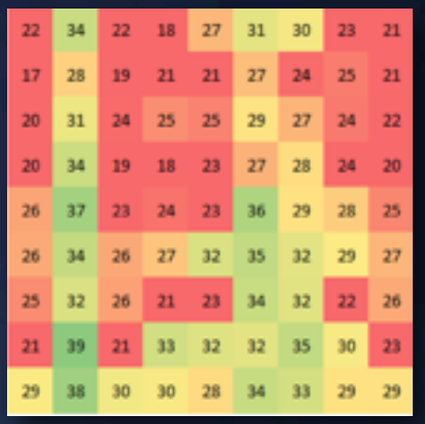
How?



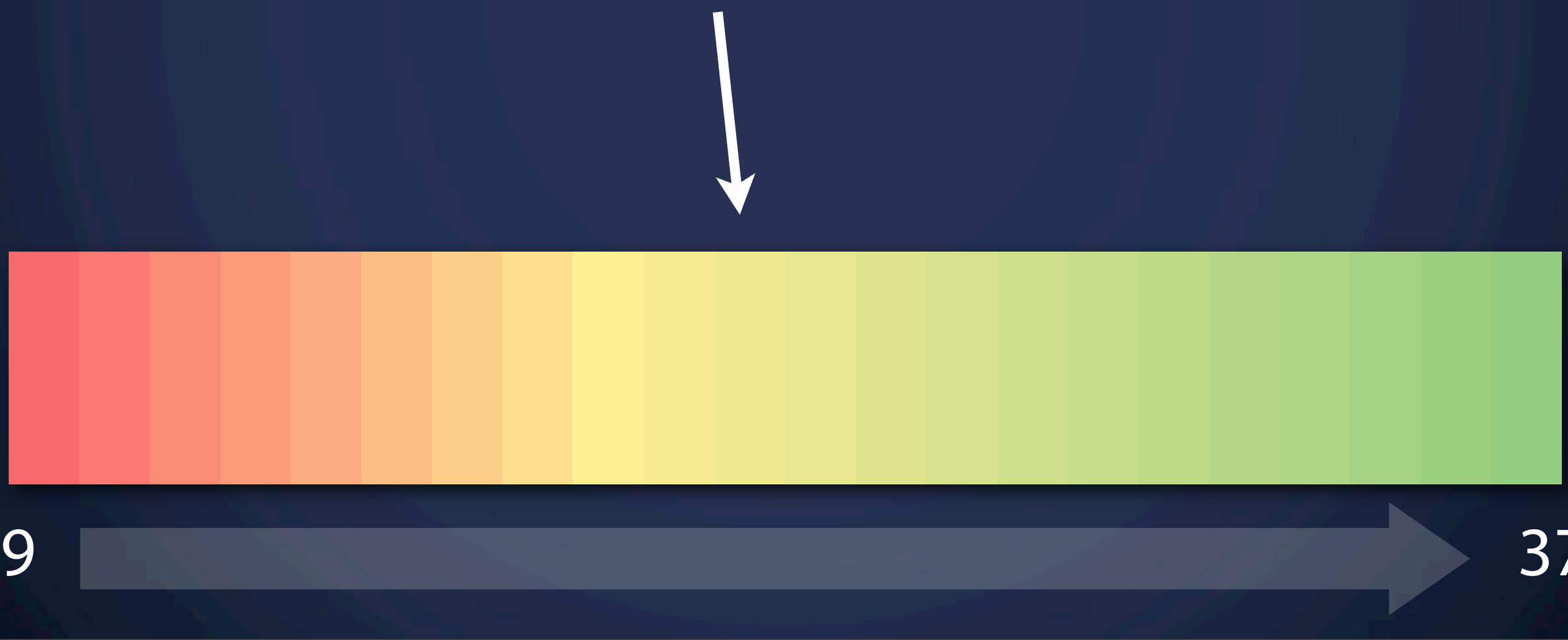
... 23 ... 29 ... 34 ...

Color Scales

How?

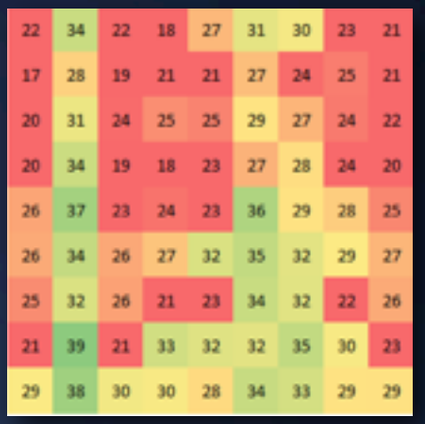


... 23 ... 29 ... 34 ...

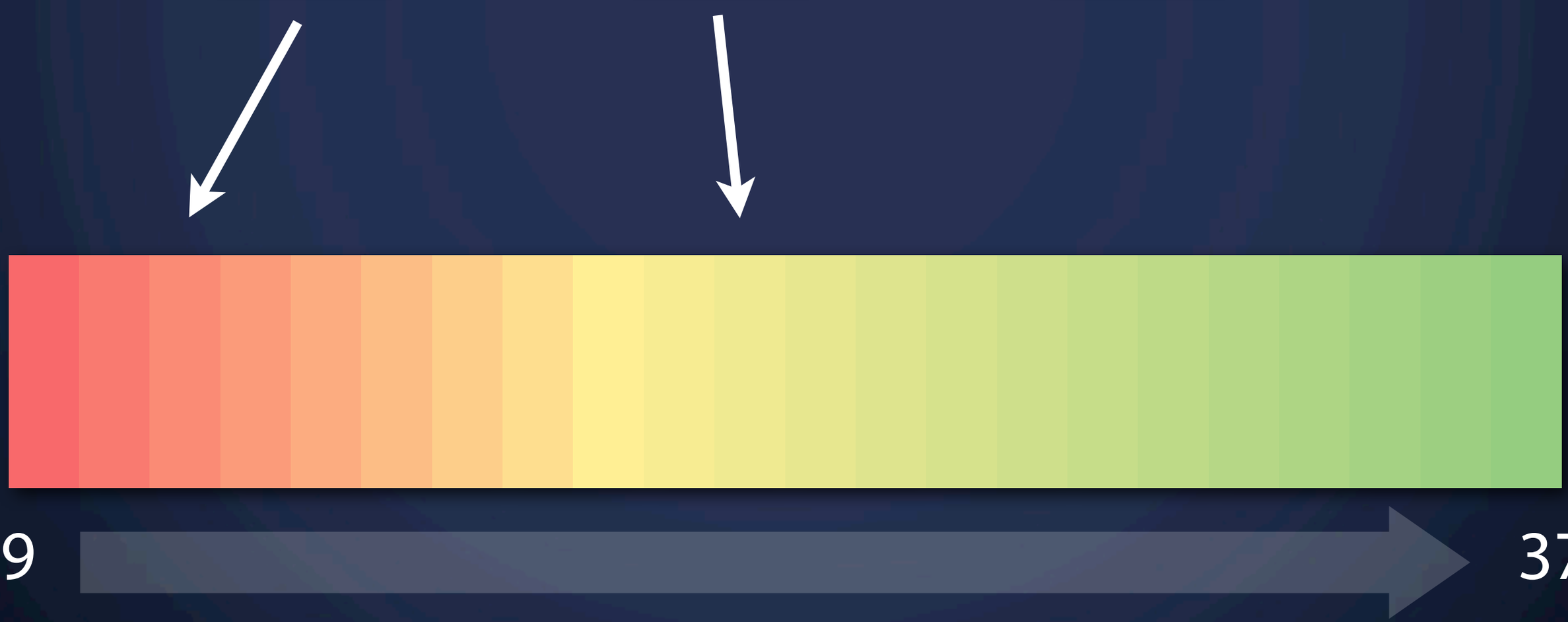


Color Scales

How?

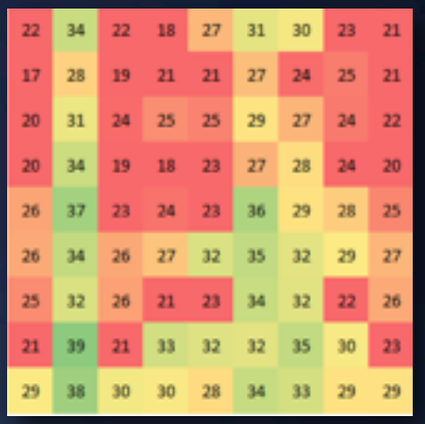


... 23 ... 29 ... 34 ...

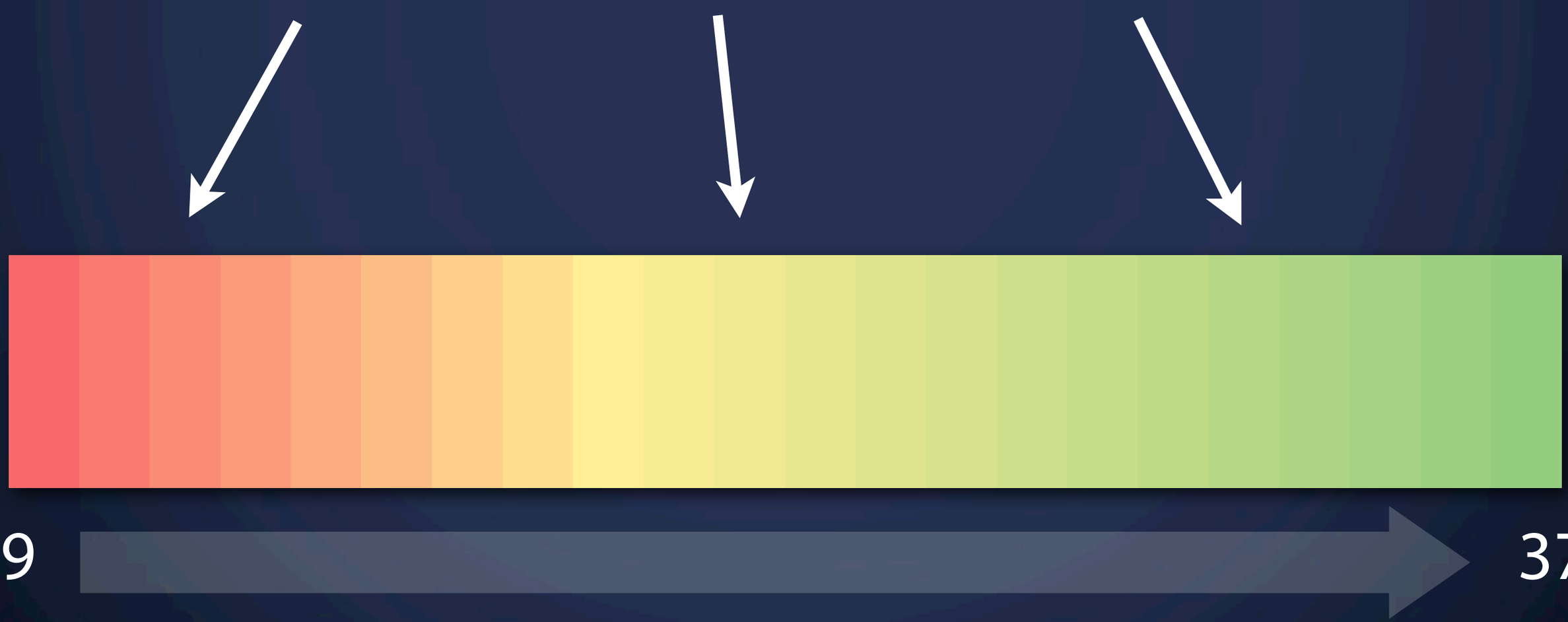


Color Scales

How?

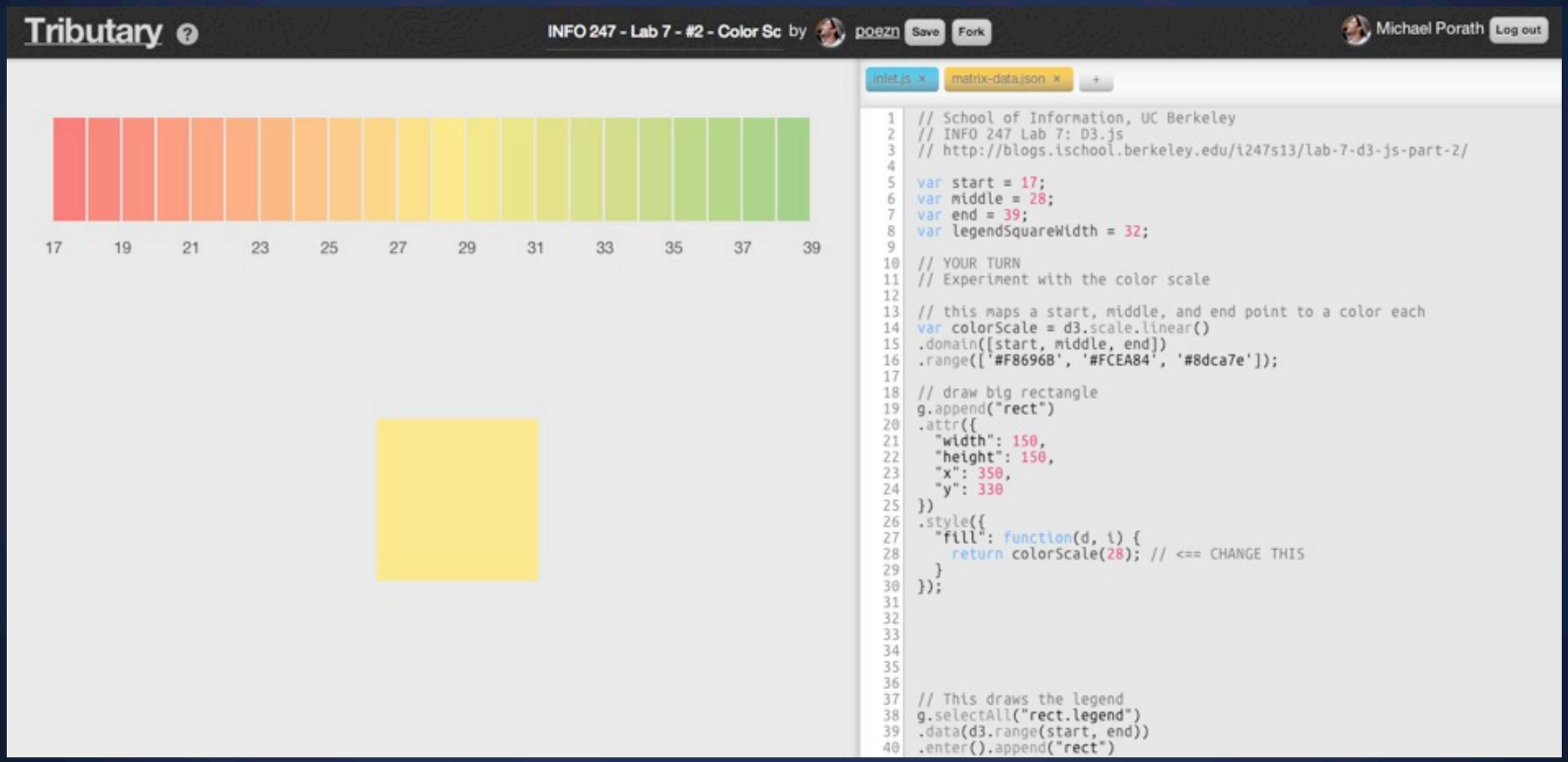


... 23 ... 29 ... 34 ...



Exercise 2

Color Scale



http://tributary.io/inlet/5111589

Exercise 3

Putting it together

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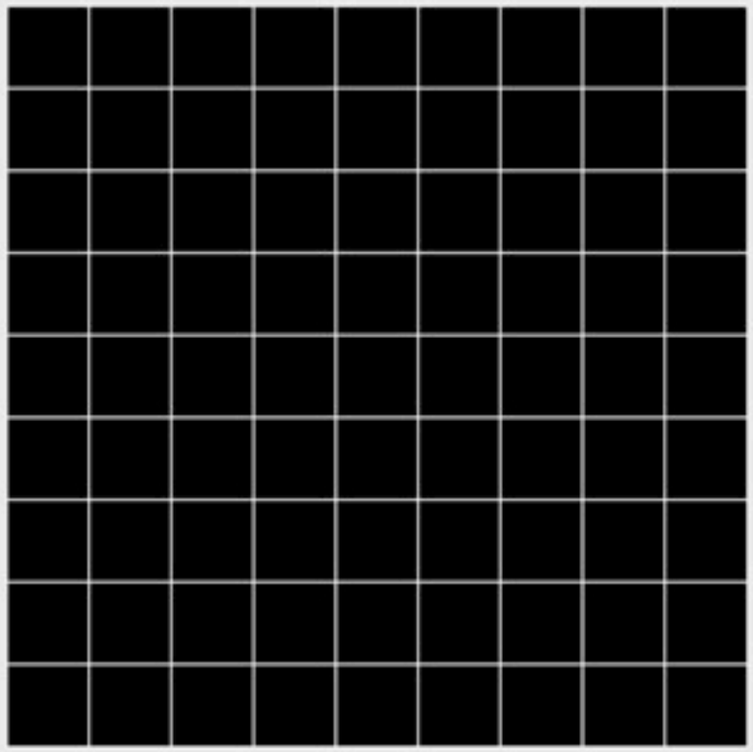

inlet.js × matrix-data.json × +

```
1  // School of Information, UC Berkeley
2  // INFO 247 Lab 7: D3.js
3  // http://blogs.ischool.berkeley.edu/i247s13/lab-7-d3-js-part-2/
4
5  // get the data from the 'matrix-data.json' data file
6  var data = tb['matrix-data'];
7
8  // Create a color scale that has the following colors:
9  // minimum: 15; red
10 // maximum: 40; green
11 // center:  23; yellow
12
13 var colorScale = d3.scale.linear()
14 .domain([1, 50])
15 .range(["#000000", "#FFFFFF"]);
16
17
18 // for each race, let's add a row that will eventually
19 // contain all squares for that particular race.
20 // We're using the SVG <g> element for this. <g> elements
21 // are invisible but can be moved around on the screen
22
23 var rows = g.selectAll("g.row")
24 .data(data)
25 .enter().append("g")
26 .attr({
27   "class": "row",
28   "transform": function(d, i) {
29     var tx = 50;
30     var ty = 50 + i * 50;
31     return "translate(" + [tx, ty] + ")"
32   }
33 });
34
35 // within each of these rows, let's add 9 squares (one for
36 // each data point)
37
38 rows.selectAll("rect")
39 .data(function(d, i) { return d.values; })
40 .enter().append("rect")
```

http://tributary.io/inlet/5054877

Exercise 3

Putting it together - Full Code

http://tributary.io/inlet/5054889

Transformations

SVG attribute “transform”

Transformations

SVG attribute “transform”

move `translate(x, y)`

Transformations

SVG attribute “transform”

move `translate(x, y)`

rotate `rotate(degrees)`

Transformations

SVG attribute “transform”

move `translate(x, y)`

rotate `rotate(degrees)`

scale `scale(factor)`

Transformations

You can chain them

```
<rect
   width="200"
   height="30"
   transform="translate(20, 50) rotate(-45) scale(3)"
></rect>
```

Exercise 4

Play with transformations

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Move Me!

Rotate Me!

Scale Me!

inlet.js ×

```
1  // School of Information, UC Berkeley
2  // INFO 247 Lab 7: D3.js
3  // http://blogs.ischool.berkeley.edu/i247s13/lab-7-d3-js-part-2/
4
5  g.append("text")
6  .attr({
7    "transform": function(d, i) {
8      var tx = 21;
9      var ty = 50;
10     return "translate(" + [tx, ty] + ")";
11   }
12 })
13 .text("Move Me!");
14
15
16 g.append("text")
17 .attr({
18   "transform": function(d, i) {
19     var tx = 21;
20     var ty = 200;
21     var rotation = -20; // degrees
22     return "rotate("+ rotation + ") translate(" + [tx, ty] + ")";
23   }
24 })
25 .text("Rotate Me!");
26
27
28 g.append("text")
29 .attr({
30   "transform": function(d, i) {
31     var tx = 21;
32     var ty = 200;
33     var scale = 2; // factor
34     // What happens if you change the order of scale and translate?
35     return "scale("+ scale + ") translate(" + [tx, ty] + ")";
36   }
37 })
38 .text("Scale Me!");
39
```

http://tributary.io/inlet/5111933

Next Lecture

Storytelling

Next Lab

Storytelling