

Lab 10

D3.js (Part III)

March 7, 2013 – Michael Porath (@poezn)

Today

More Scales; Layouts

Flashback: Color Scales

22	34	22	18	27	31	30	23	21
17	28	19	21	21	27	24	25	21
20	31	24	25	25	29	27	24	22
20	34	19	18	23	27	28	24	20
26	37	23	24	23	36	29	28	25
26	34	26	27	32	35	32	29	27
25	32	26	21	23	34	32	22	26
21	39	21	33	32	32	35	30	23
29	38	30	30	28	34	33	29	29

...

23

...

29

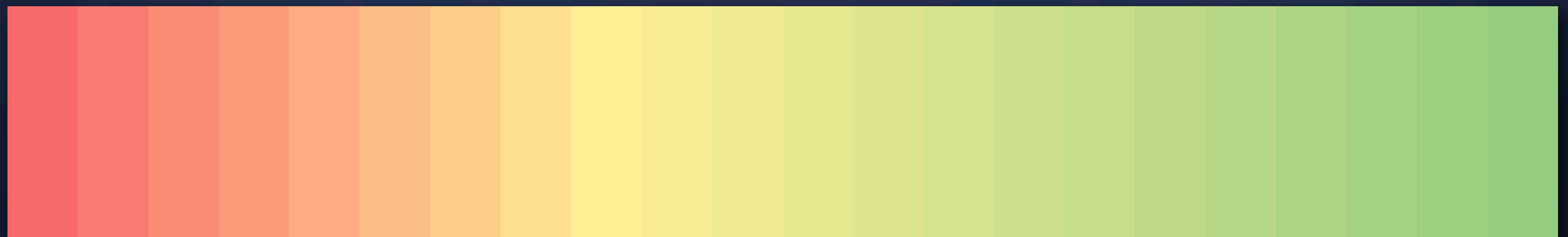
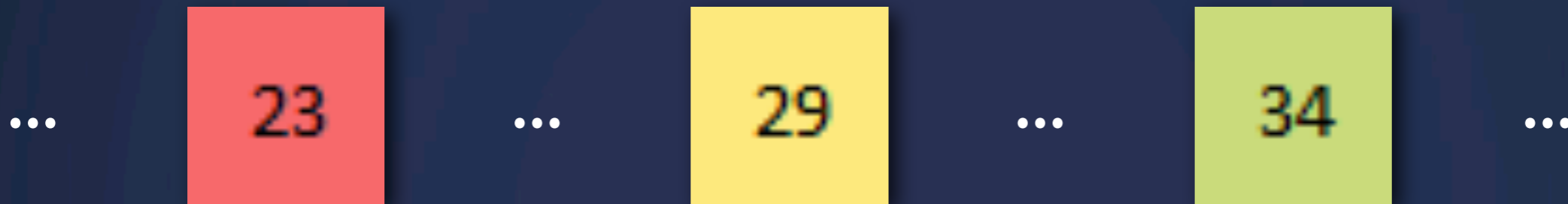
...

34

...

Flashback: Color Scales

22	34	22	18	27	31	30	23	21
17	28	19	21	21	27	24	25	21
20	31	24	25	25	29	27	24	22
20	34	19	18	23	27	28	24	20
26	37	23	24	23	36	29	28	25
26	34	26	27	32	35	32	29	27
25	32	26	21	23	34	32	22	26
21	39	21	33	32	32	35	30	23
29	38	30	30	28	34	33	29	29



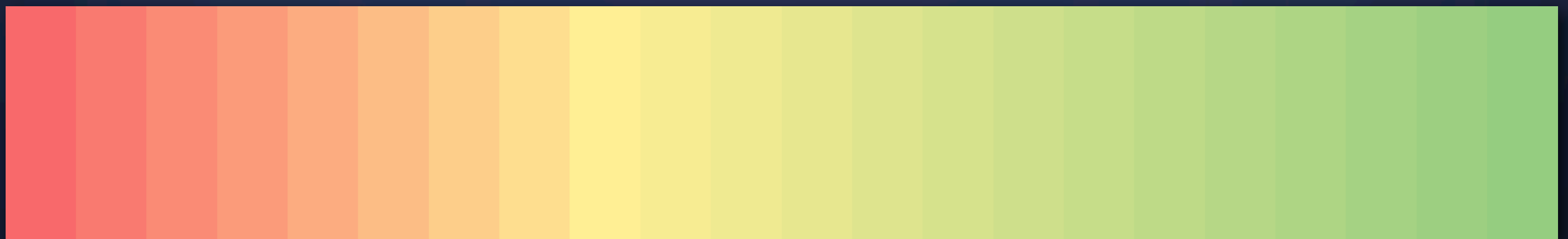
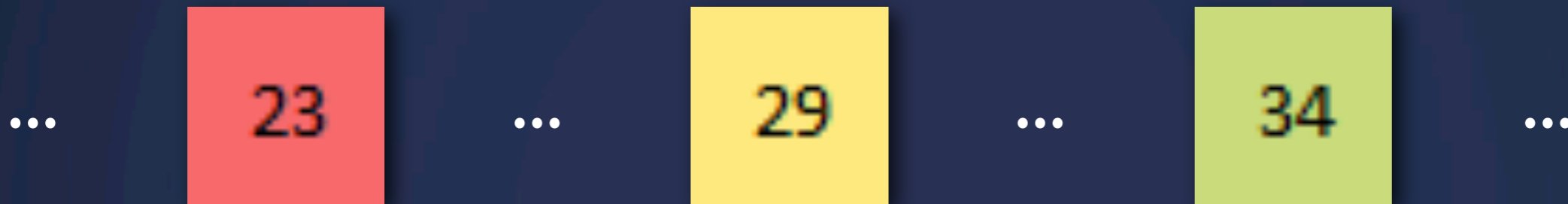
19



37

Flashback: Color Scales

22	34	22	18	27	31	30	23	21
17	28	19	21	21	27	24	25	21
20	31	24	25	25	29	27	24	22
20	34	19	18	23	27	28	24	20
26	37	23	24	23	36	29	28	25
26	34	26	27	32	35	32	29	27
25	32	26	21	23	34	32	22	26
21	39	21	33	32	32	35	30	23
29	38	30	30	28	34	33	29	29

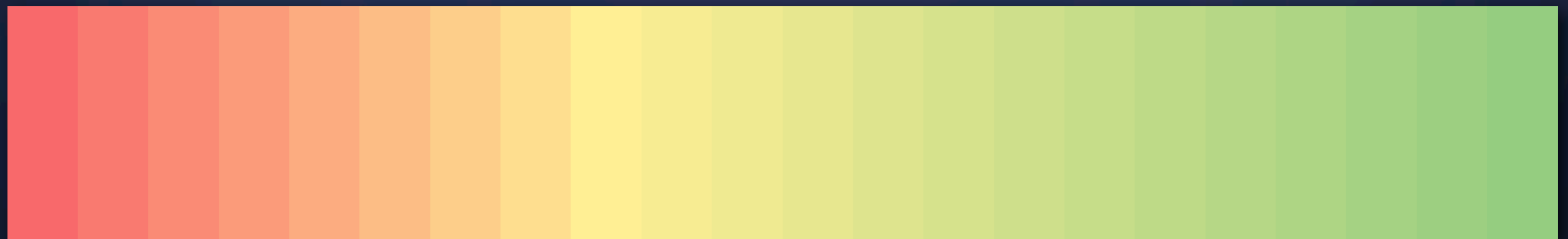
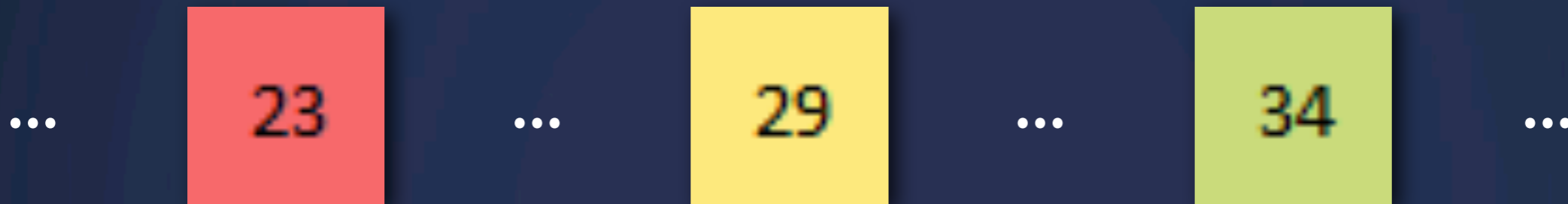


19



37

Flashback: Color Scales



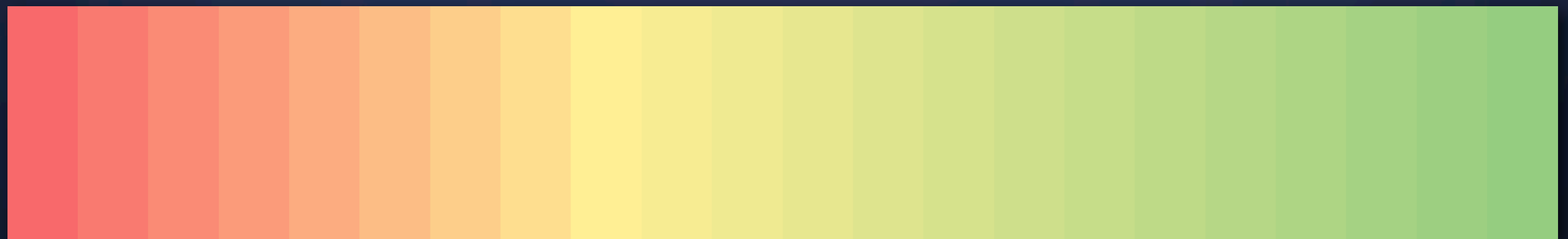
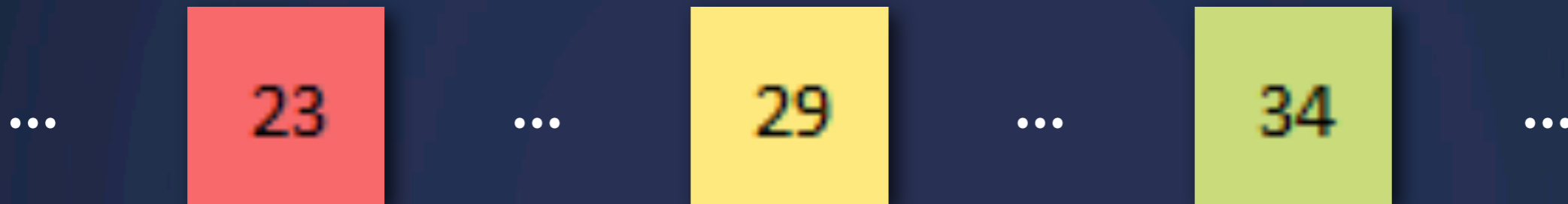
19



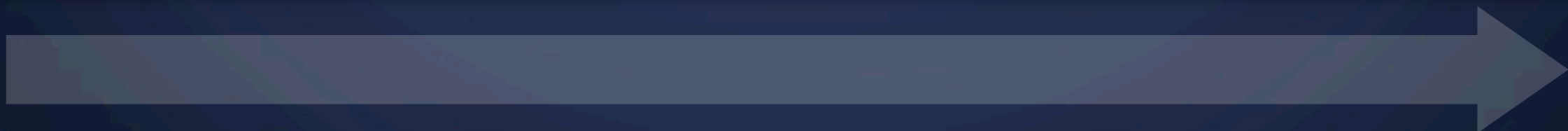
37

Flashback: Color Scales

22	34	22	18	27	31	30	23	21
17	28	19	21	21	27	24	25	21
20	31	24	25	25	29	27	24	22
20	34	19	18	23	27	28	24	20
26	37	23	24	23	36	29	28	25
26	34	26	27	32	35	32	29	27
25	32	26	21	23	34	32	22	26
21	39	21	33	32	32	35	30	23
29	38	30	30	28	34	33	29	29



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Exercise 1

Linear Scales

Tributary ? INFO 247 - Lab 10 - #1 - Linear S by  poezn Save Fork  Michael Porath Log out





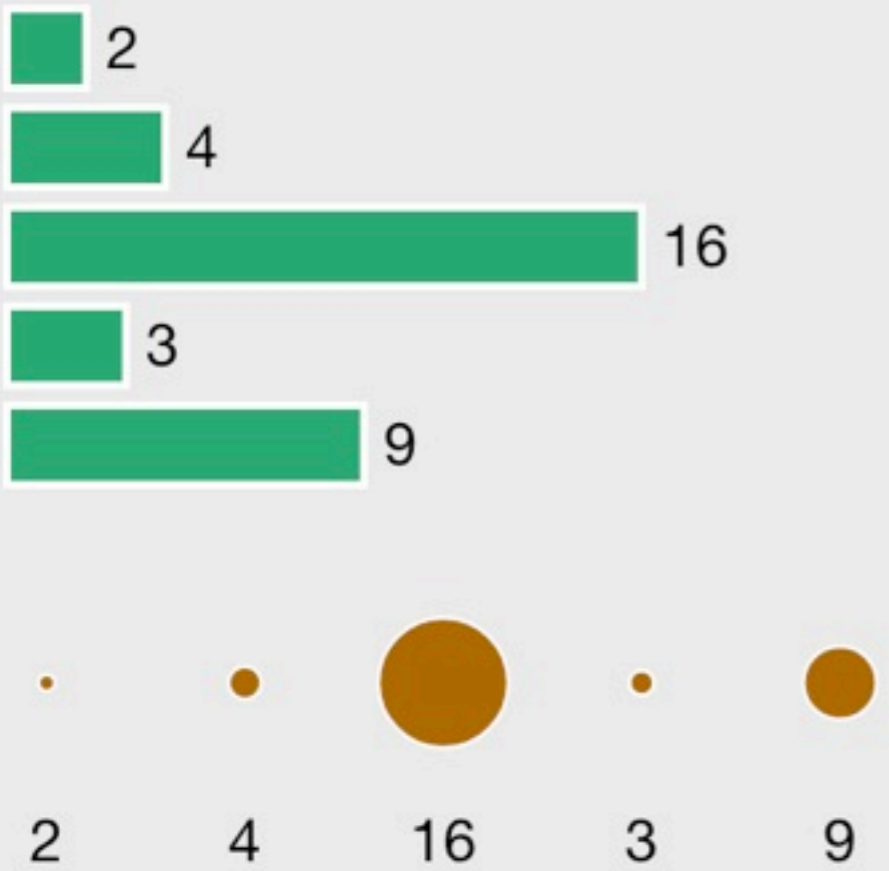
```
1 // School of Information, UC Berkeley
2 // INFO 247 Lab 10: D3.js Part III
3 // http://blogs.ischool.berkeley.edu/i247s13/lab-10-d3-js-part-3/
4
5 var data = [2, 4, 16, 3, 9];
6
7 // Let's look at a very simple scale
8 var scale = function(d, i) {
9   return d * 30;
10 };
11
12 // And now let's look at how this is done better with D3
13 // This gives you a "scale" function, similar to the one above
14 //var scale = d3.scale.linear()
15 // .domain([0, 20])
16 // .range([0, 400]);
17
18 // draw the bars
19 g.selectAll("rect.bar")
20 .data(data)
21 .enter().append("rect")
22 .attr({
23   "width": function(d, i) {
24     return scale(d);
25   },
26   "height": 40,
27   "x": function(d, i) {
28     return 30;
29   },
30   "y": function(d, i) {
31     return 10 + i * 50
32   }
33 });
34
35 g.selectAll("text.bar")
36 .data(data)
```

<http://tributary.io/inlet/5312833>

Exercise 2

Scales for Areas

Tributary ? INFO 247 - Lab 10 - #2 - Area Sc by  poezn Save Fork  Michael Porath Log out



```
1 // School of Information, UC Berkeley
2 // INFO 247 Lab 10: D3.js Part III
3 // http://blogs.ischool.berkeley.edu/i247s13/lab-10-d3-js-part-3/
4
5 var data = [2, 4, 16, 3, 9];
6
7 // And now let's look at how this is done better with D3
8 // This gives you a "scale" function, similar to the one above
9 var scale = d3.scale.linear()
10 .domain([0, 20])
11 .range([0, 400]);
12
13 // vvvv
14 // Hint: There is something wrong with this:
15 // ^^^^
16 var areaScale = d3.scale.linear()
17 .domain([0, 20])
18 .range([0, 41]);
19
20
21 // draw the circles and texts
22 g.selectAll("circle.bubble")
23 .data(data)
24 .enter().append("circle")
25 .attr({
26   "cx": function(d, i) {
27     return 50 + (100 * i);
28   },
29   "cy": 350,
30   "r": function(d, i) {
31     return areaScale(d); // <===== Let's scale this according to
32   }
33 });
```

<http://tributary.io/inlet/5313268>

Exercise 3

Time Scale



The screenshot displays a Tributary.io project titled "INFO 247 - Lab 10 - #3" by user "poezn". The visualization on the left shows a horizontal timeline with a black line and an orange dot at the start, representing the year 2009. Below the line, the years 2009, 2010, 2011, and 2012 are marked. The right side of the image shows the source code for the visualization, which uses D3.js to create an SVG axis and append event bubbles.

```
38   "x1": range[0],
39   "x2": range[1],
40   "y1": y,
41   "y2": y
42 }
43 .style({
44   "stroke": "#000000",
45   "stroke-width": 2
46 });
47
48
49 var axis = d3.svg.axis()
50 .scale(timeScale)
51 .ticks(3);
52
53 g.append("g")
54 .attr({
55   "transform": "translate(0,243)"
56 })
57 .call(axis);
58
59
60 // =====
61 // Bubbles for events
62
63 g.selectAll("circle.total")
64 .data(data)
65 .enter().append("circle")
66 .attr({
67   "class": "total",
68   "r": 8, // <== we want to show the number of fatalities here
69   "cx": 50 // <== we want to move the event bubbles to
70           // where they are on a timeline
```

<http://tributary.io/inlet/5313532>

Exercise 3

Time Scale (Full Code)

The image shows a screenshot of a web browser displaying a time scale visualization. The visualization features a horizontal timeline with vertical bars for the years 2008, 2009, 2010, 2011, and 2012. A series of orange circles of varying sizes are plotted along the timeline, representing data points. A tooltip is visible over a data point in 2011, titled "Tucson, Arizona", with the text: "Jared Loughner, 22, opened fire outside a Safeway during a constituent meeting with Congresswoman Gabrielle Giffords (D-Ariz.) before he was subdued by bystanders and arrested."

The browser interface includes the "Tributary" logo, the page title "INFO 247 - Lab 10 - #3 (full code)", and the user "Michael Porath". The code editor shows the following JavaScript code:

```
110     r : function(d, i) {
111         return radiusScale(d.Fatalities)
112     },
113     "cx": function(d, i) {
114         return timeScale(d.Date)
115     },
116     "cy": y
117 })
118 .style({
119     "opacity": 1,
120     "fill": "#EB6D27"
121 })
122
123 var tmpl = .template("<h2><%=Location%></h2><div><%=Summary%></div>");
124 g.selectAll("circle")
125 .on("mouseover", function(d, i) {
126     var x = d3.event.x + 10;
127     var y = d3.event.y + 10;
128
129     var t
130     $("#popover").css({
131         top: y + "px",
132         left: x + "px",
133         display: "inline"
134     })
135     .html(tmpl(d));
136
137 })
138 .on("mouseout", function(d, i) {
139     $("#popover").css({
140         display: "none"
141     })
142 })
```

<http://tributary.io/inlet/5058838>

Layouts

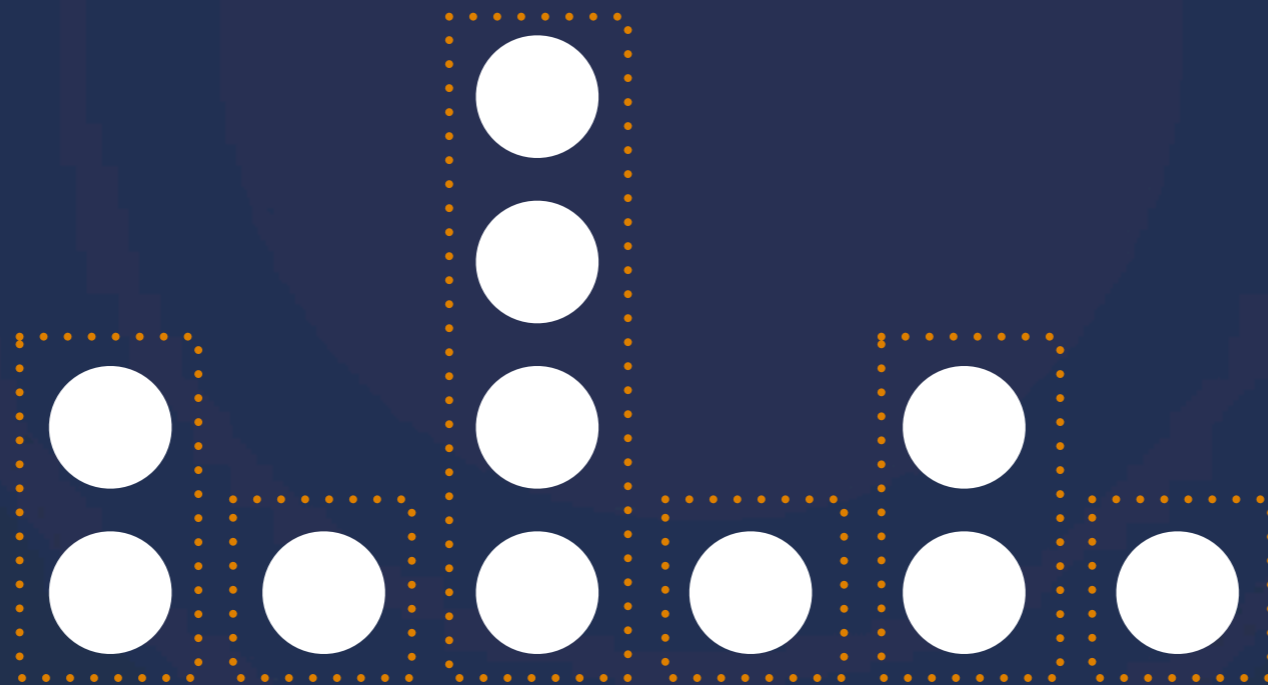
... are only helper functions that do data transformation

```
[1, 8, 13, 20, 24, 48, 30, 25, 25, 40, 58]
```

Layouts

... are only helper functions that do data transformation

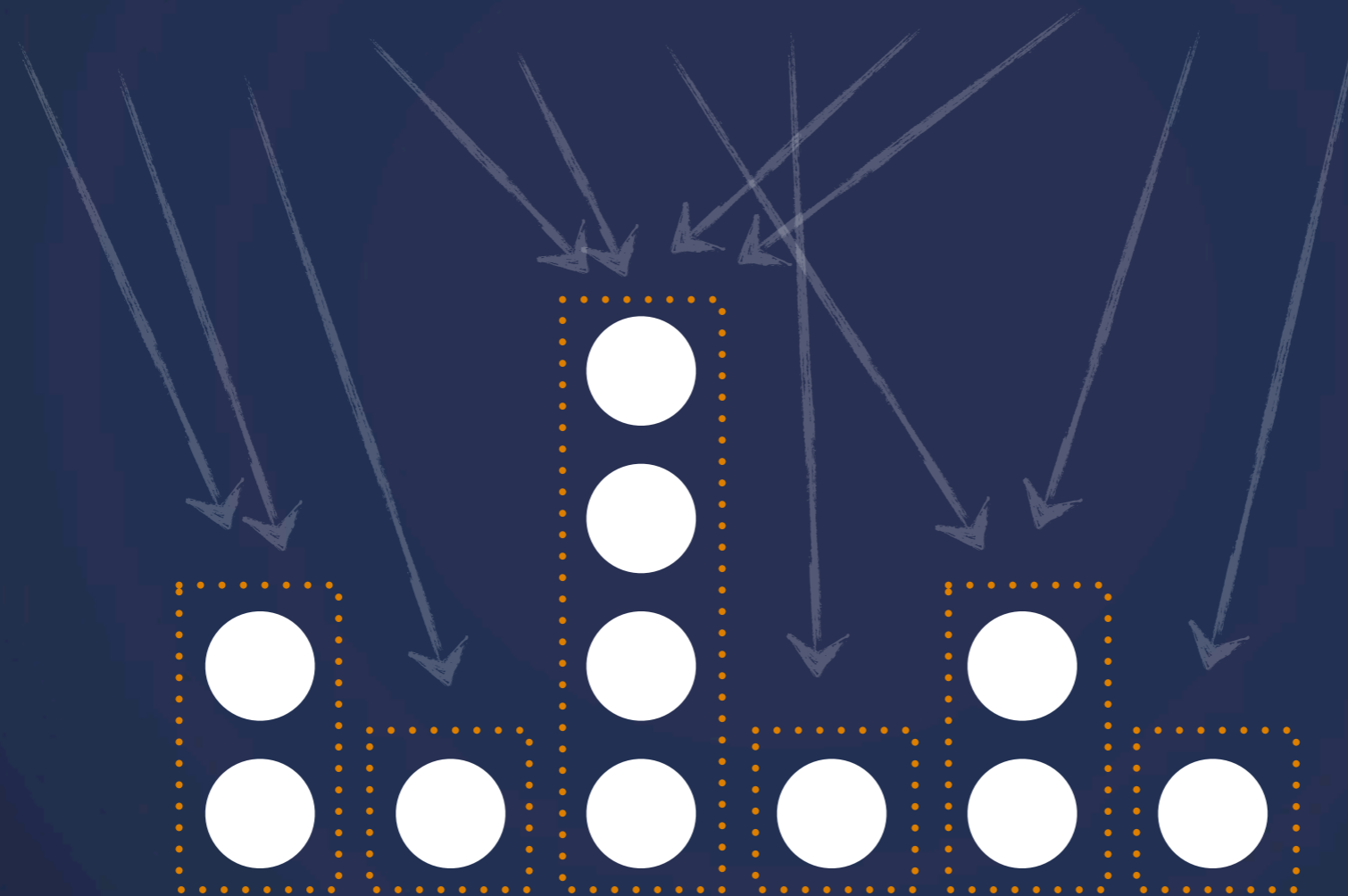
[1, 8, 13, 20, 24, 48, 30, 25, 25, 40, 58]



Layouts

... are only helper functions that do data transformation

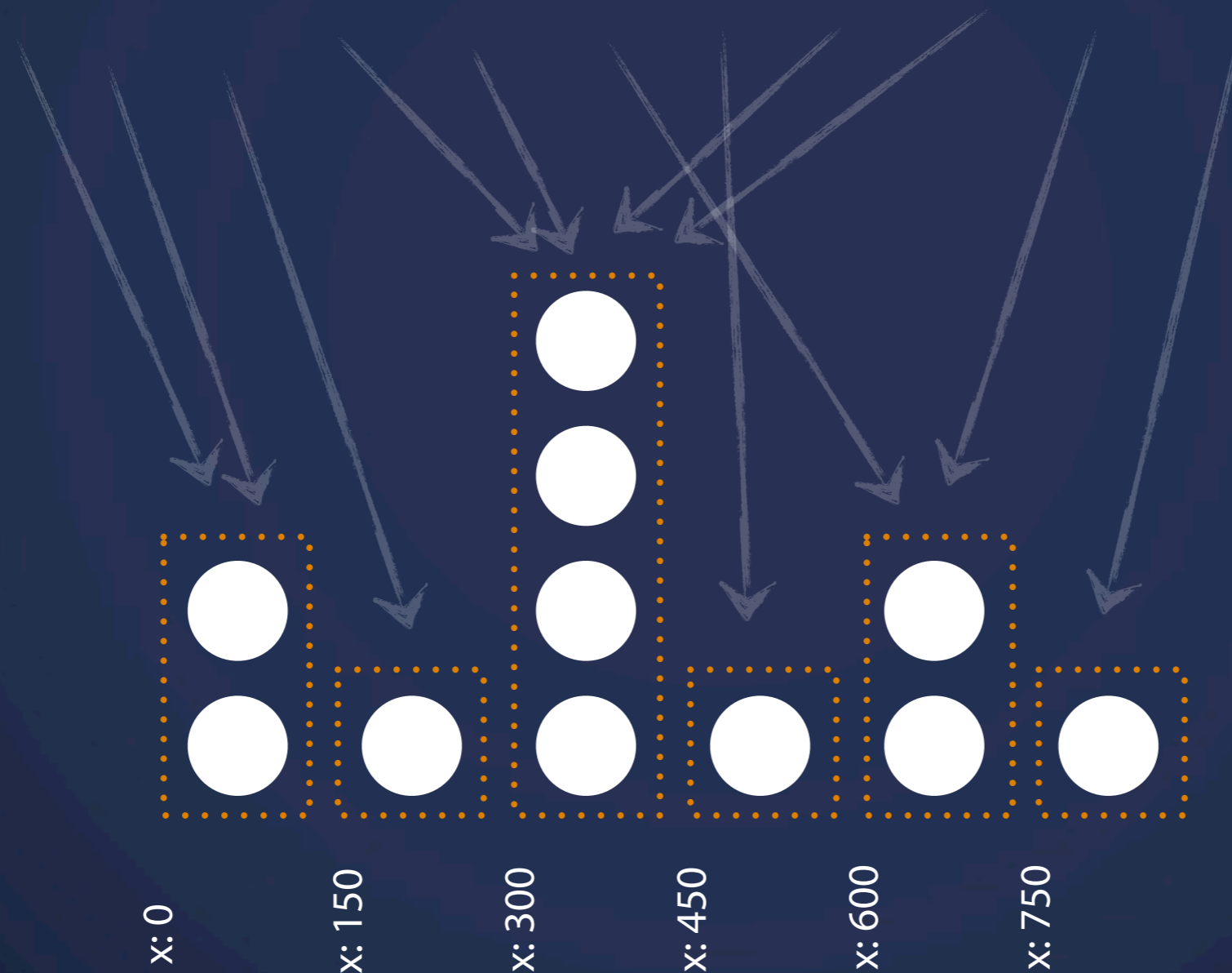
[1, 8, 13, 20, 24, 48, 30, 25, 25, 40, 58]



Layouts

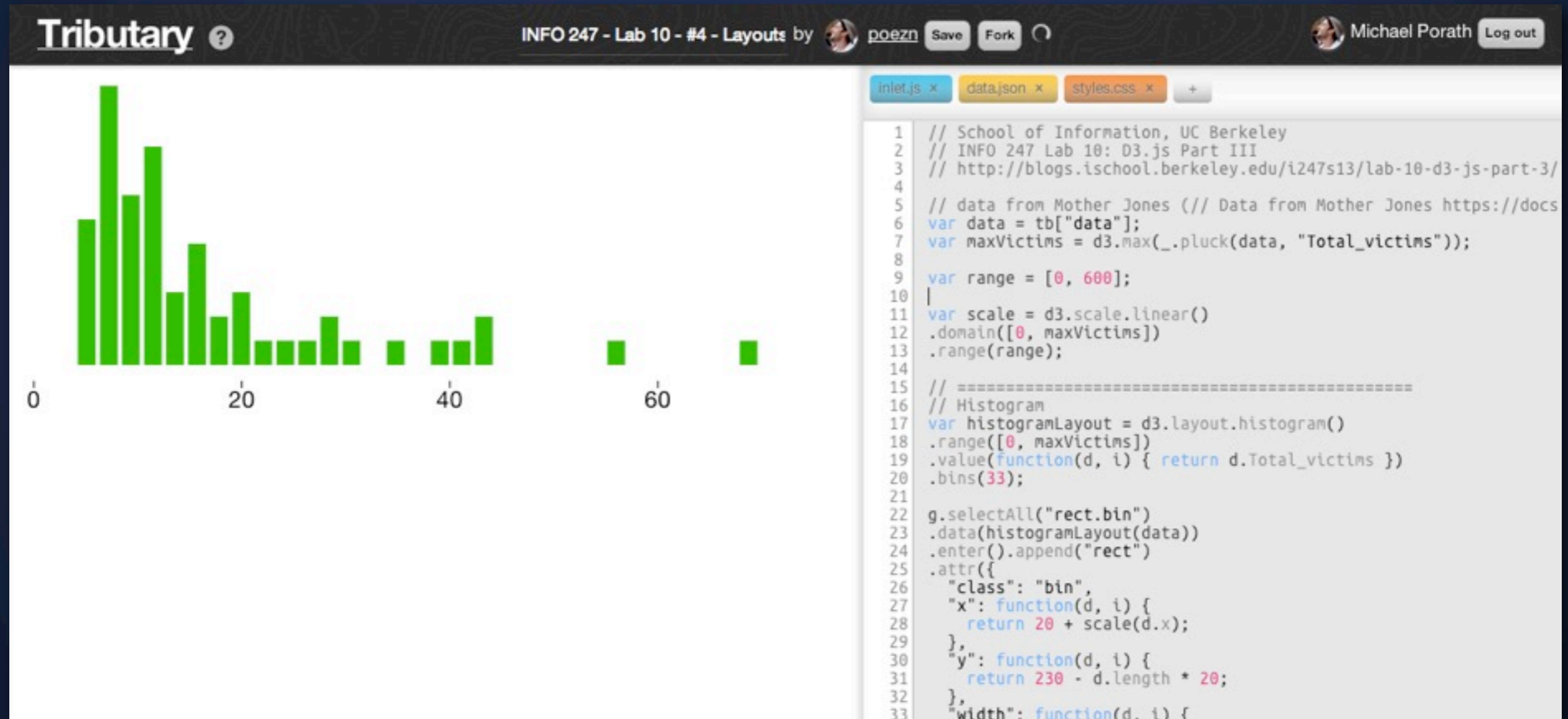
... are only helper functions that do data transformation

[1, 8, 13, 20, 24, 48, 30, 25, 25, 40, 58]



Exercise 4

Layouts: Histogram



<http://tributary.io/inlet/5313741>

Next Lecture

Types of Visualization II: Text

Next Lab

Concept Critique