Information Visualization 2021 | Computer Science & iCompetence
Marco Soldati

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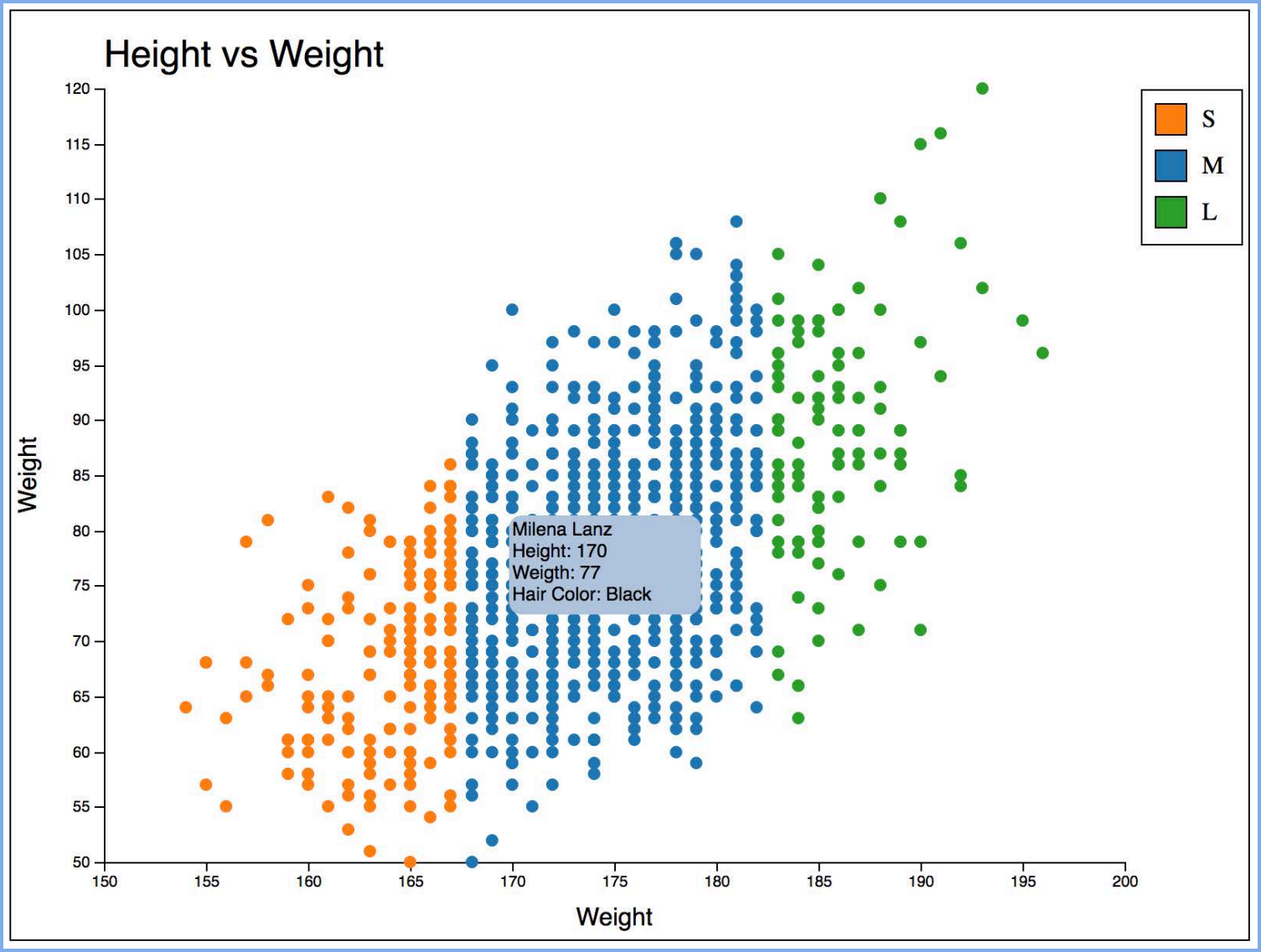
D3 Introduction

04 Animations and beyond

Goal – Animate Scatterplot



Data Joins

Prefer new selection.join() pattern. It combines enter(), exit(), merge().

```
{
    const svg = d3.create("svg")
        .attr("width", width)
        .attr("height", 33)
        .attr("viewBox", `0 -20 ${width} 33`);

    svg.selectAll("text")
        .data(randomLetters())
        .join("text")
        .attr("x", (d, i) => i * 16)
        .text(d => d);

    return svg.node();
}
```

Browser Console

CTRL-F12
CMD-F12

D3 – Animations

Method	Description
selection.transition()	this schedules a transition for the selected elements
transition.duration()	duration specifies the animation duration in milliseconds for each element
transition.ease()	ease specifies the easing function, example: linear, elastic, bounce
transition.delay()	delay specifies the delay in animation in milliseconds for each element

D3 – .transition() .duration()

```
<body>
  <div id="container" style="height: 100px; width: 100px;
     background-color: black; position:absolute;"></div>
  <script>
    d3.select("#container")
      .transition()
      .duration(1000)
      .style("background-color", "red");
  </script>
</body>
```

D3 – .delay()

```
<body>
  <div id="container" style="height: 100px; width: 100px;
       background-color: black; position:absolute;"></div>
  <script>
    d3.select("#container")
      .transition()
      .delay(2000)
      .duration(1000)
      .ease(d3.easeBounce)
      .style("background-color", "red")
      .transition()
      .style("left", "500px");
  </script>
</body>
```

D3 – .ease()

```
<body>
  <div id="container" style="height: 100px; width: 100px;
     background-color: black; position:absolute;"></div>
  <script>
    d3.select("#container")
      .transition()
      .duration(1000)
      .ease(d3.easeBounce)
      .style("background-color", "red");
  </script>
</body>
```

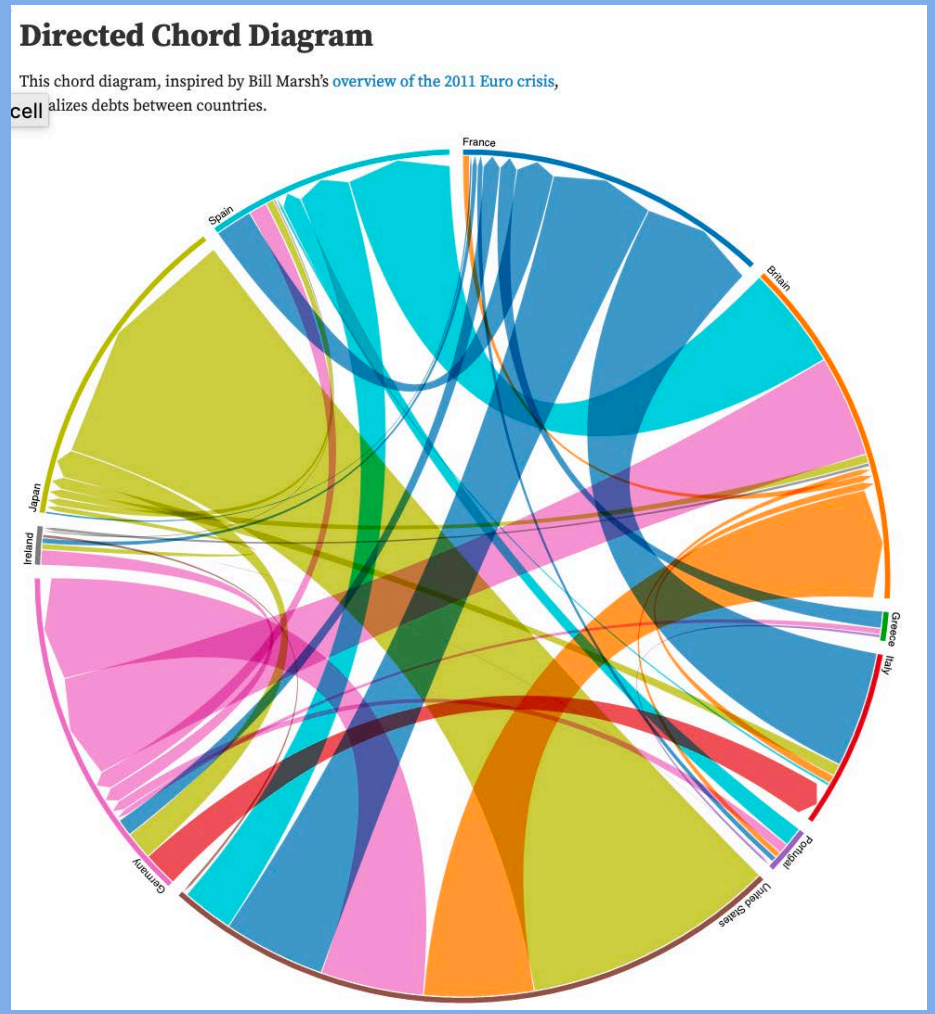
https://observablehq.com/@d3/easing-animations

Your turn

- Add initial amination to interactive scatterplot

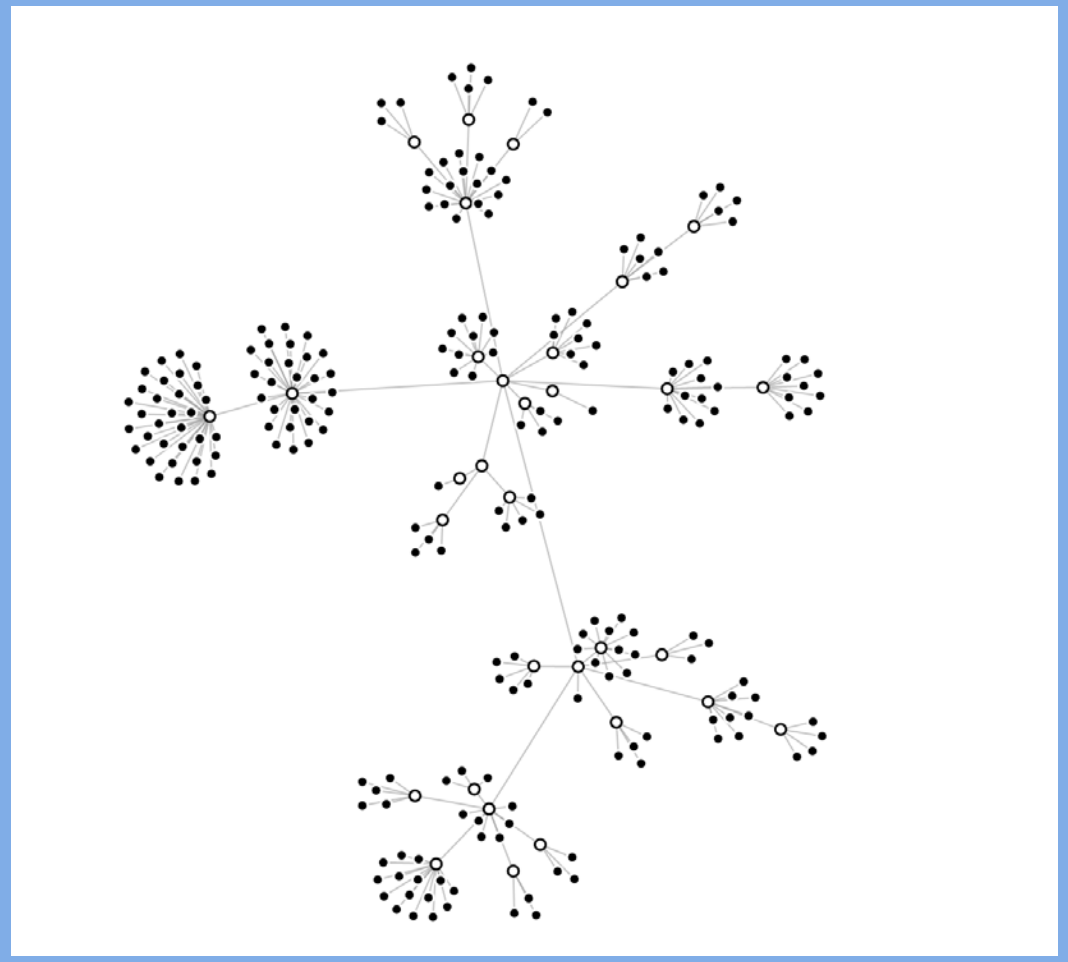
D3 – Chord

https://github.com/d3/d3-chord



D3 – Force

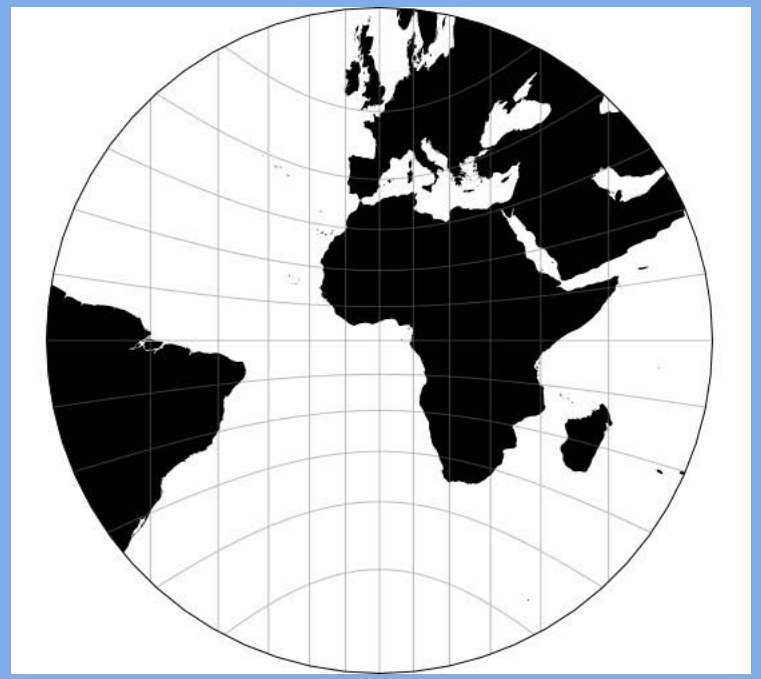
https://github.com/d3/d3-force

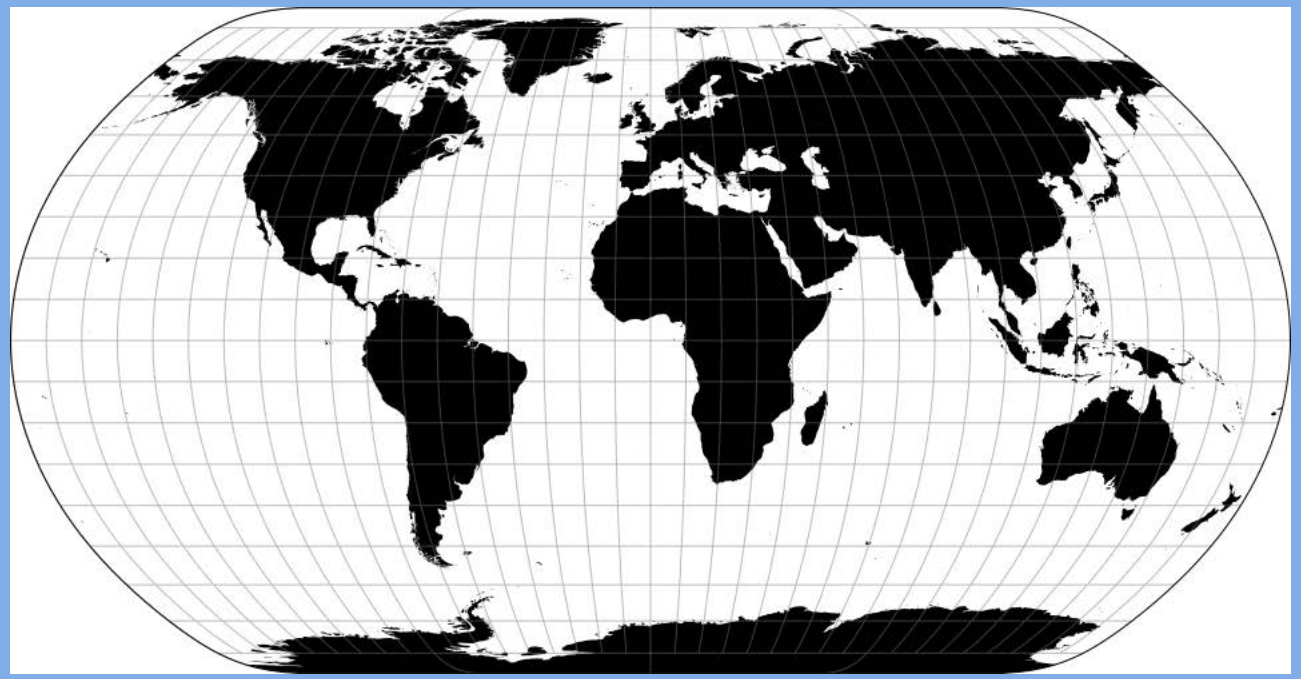


https://observablehq.com/@d3/simulation-tick?collection=@d3/d3-force

D3 – Geo

https://github.com/d3/d3-geo

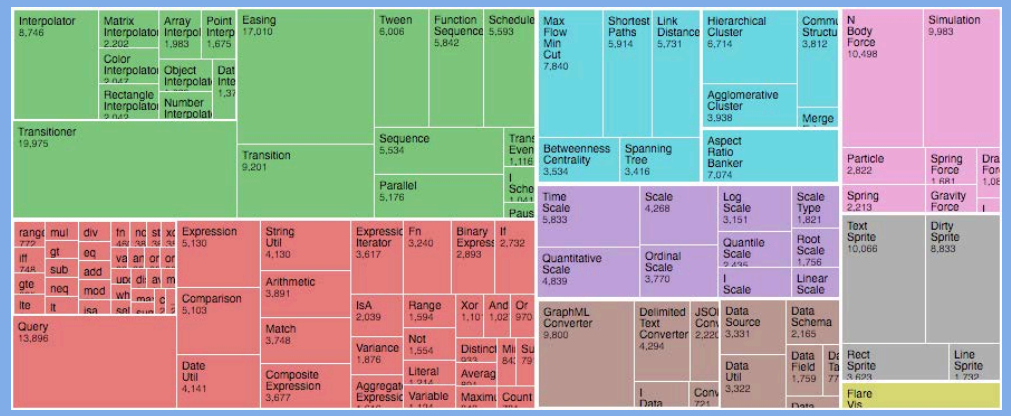




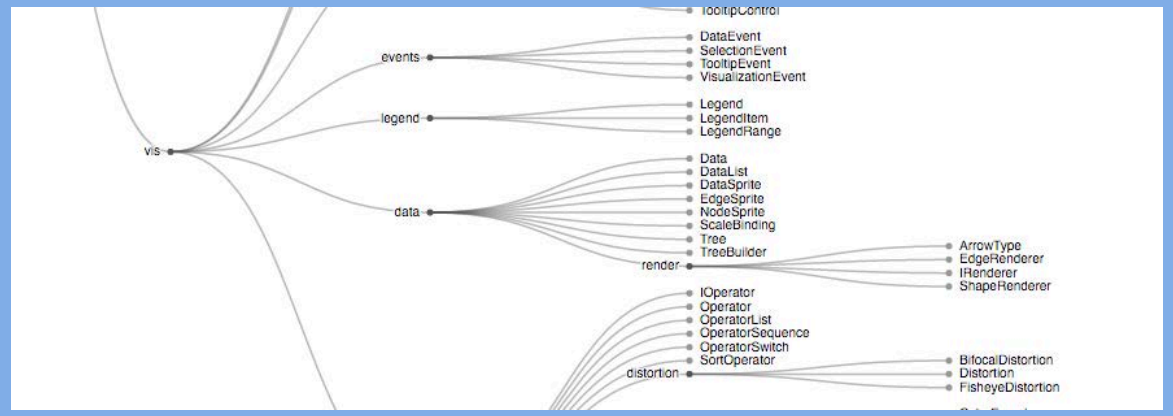
https://observablehq.com/collection/@d3/d3-geo

D3 – Hierarchy

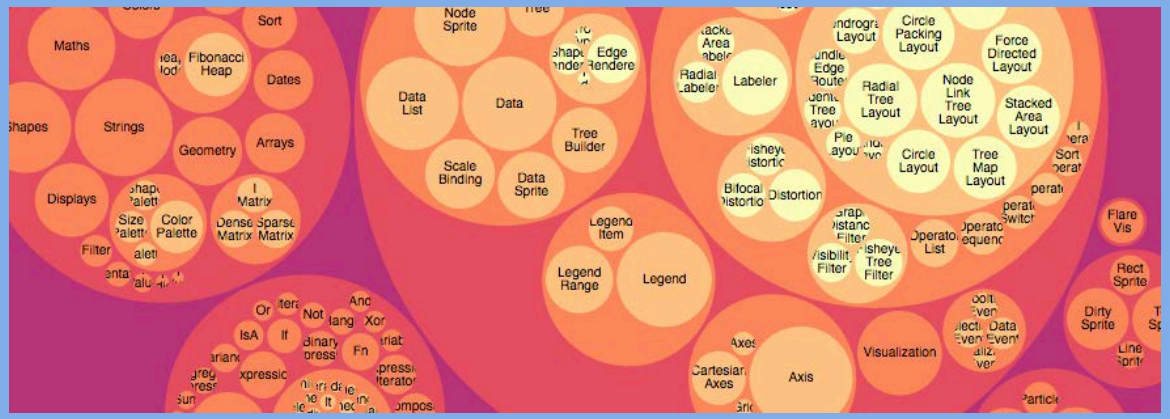
https://github.com/d3/d3-hierarchy



Treemap



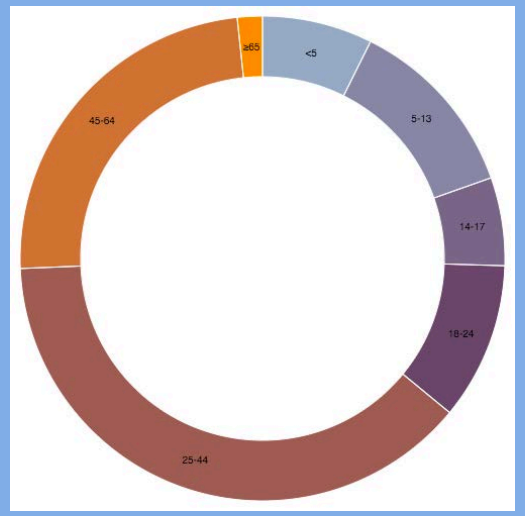
Tree



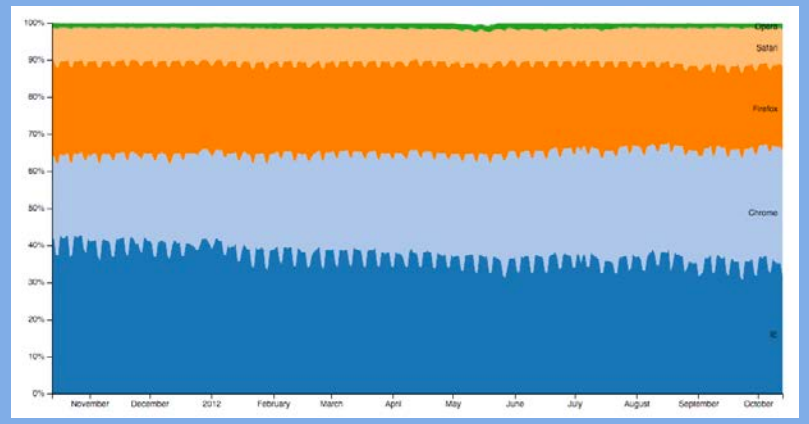
Pack

D3 – Shapes

https://github.com/d3/d3-shape



Arc



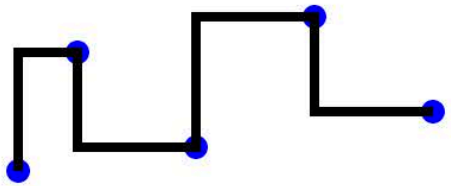
Area

Symbol

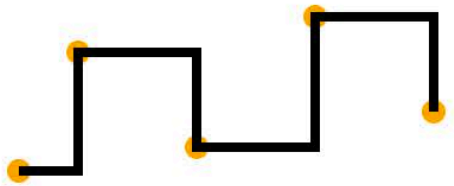
https://observablehq.com/@d3/learn-d3-shapes

D3 – Shapes (Lines)

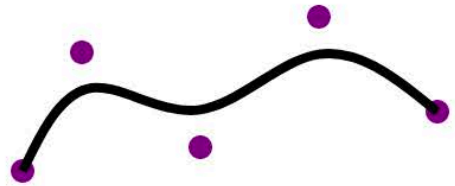
d3.curveLinear



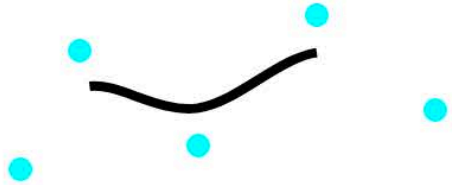
d3.curveStepBefore



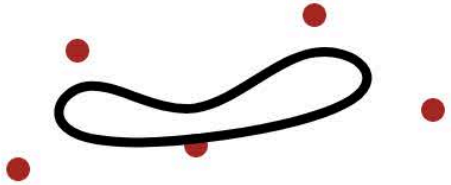
d3.curveStepAfter



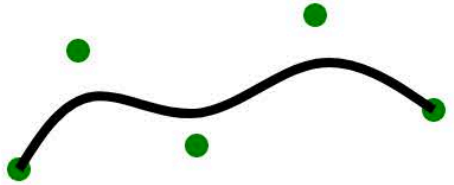
d3.curveBasis



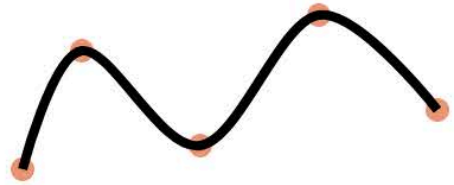
d3.curveBasisOpen



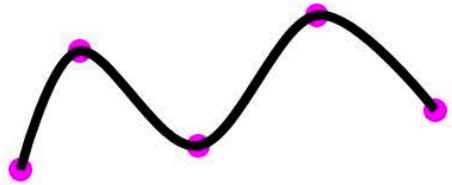
d3.curveBasisClosed



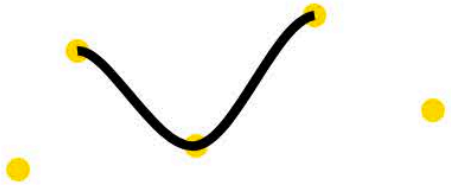
d3.curveBundle



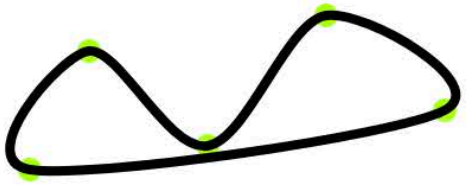
d3.curveCardinal



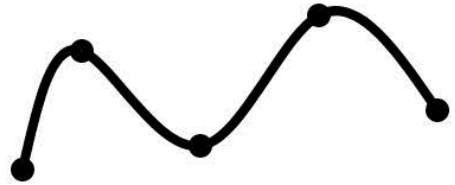
d3.curveCardinal



d3.curveCardinalOpen



d3.curveCardinalClosed



d3.curveNatural