Advanced Topic Presentation - D3

Interactive Data Driven Visualization

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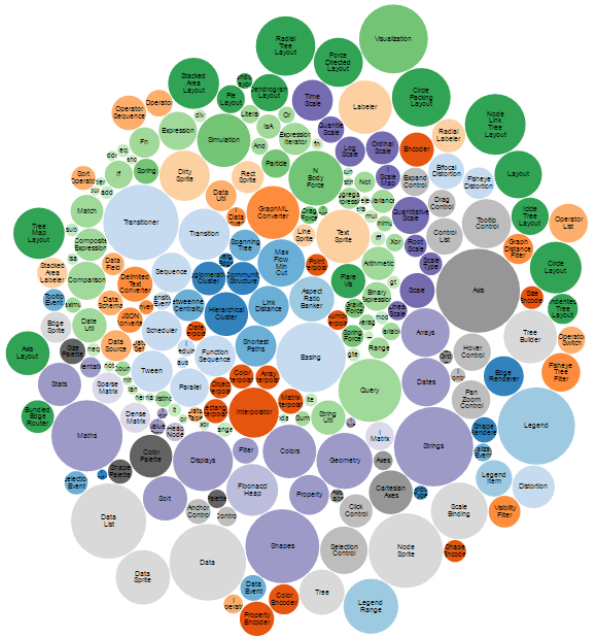
D3 stands for **Data-Driven Documents**

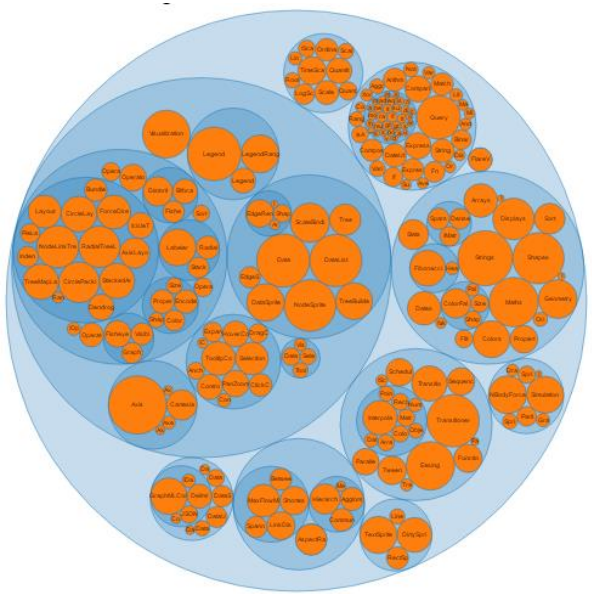
Open Source

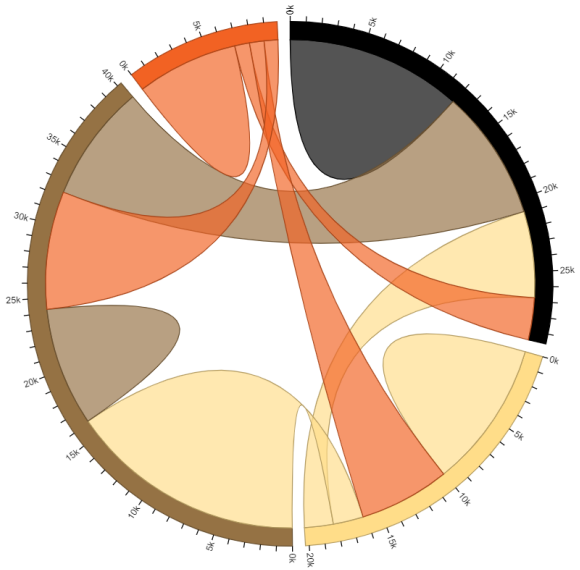
Data Driven

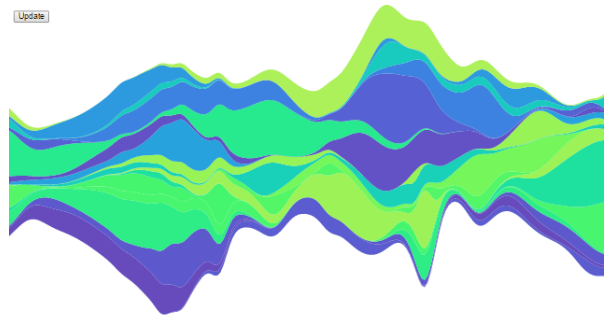
Interactive

D3 Sample Charts









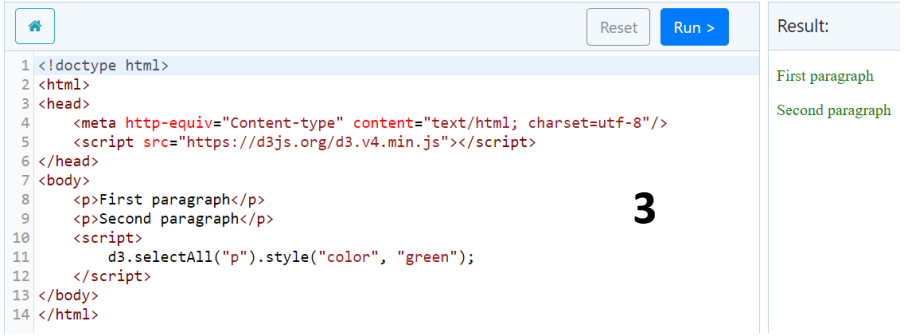
How It works - Basic

1

```
<!DOCTYPE html>
<html lang="en">
<head>
    <script src="../d3.min.js"></script>
</head>
<body>
```

2

```
<script>
    // write your d3 code here..
</script>
</body>
</html>
```

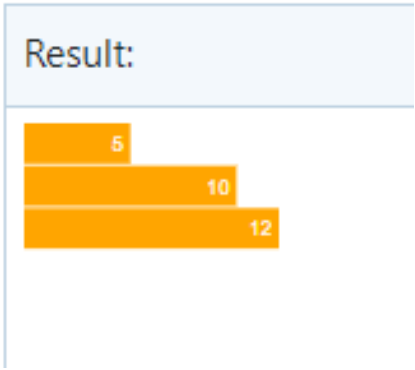


3

4

```
<!doctype html>
<html>
<head>
    <script src="https://d3js.org/d3.v4.min.js"></script>
</head>
<style>
    svg rect {
        fill: orange;
    }

    svg text {
        fill:white;
        font: 10px sans-serif;
        text-anchor: end;
    }
</style>
<body>
    <svg class="chart" width="420" height="120">
        <g transform="translate(0,0)">
            <rect width="50" height="19"></rect>
            <text x="47" y="9.5" dy=".35em">5</text>
        </g>
        <g transform="translate(0,20)">
            <rect width="100" height="19"></rect>
            <text x="97" y="9.5" dy=".35em">10</text>
        </g>
        <g transform="translate(0,40)">
            <rect width="120" height="19"></rect>
            <text x="117" y="9.5" dy=".35em">12</text>
        </g>
    </svg>
</body>
</html>
```



How It works - Charts

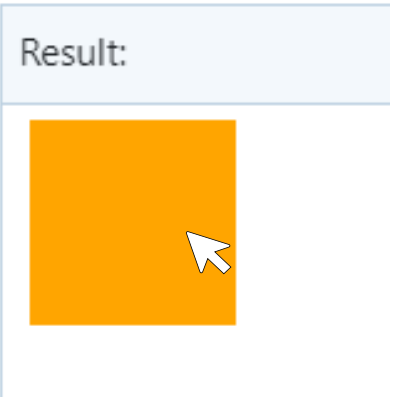
```
<!doctype html>
<html>
<head>
    <style>
        div {
            height: 100px;
            width: 100px;
            background-color: steelblue;
            margin:5px;
        }
    </style>
    <script src="https://d3js.org/d3.v4.min.js"></script>
</head>
<body>
<div> </div>
<script>
    d3.selectAll("div")
      .on("mouseover", function(){
          d3.select(this)
            .style("background-color", "orange");

          // Get current event info
          console.log(d3.event);

          // Get x & y co-ordinates
          console.log(d3.mouse(this));
      })
      .on("mouseout", function(){
          d3.select(this)
            .style("background-color", "steelblue")
      });
</script>
</body>
</html>
```

My Object

Code for Interactive



How It works – Interactive Elements

Useful Libraries

D3 Libraries

The following are popular libraries that give various types of chart building functionalities and customizable features:

Library	Source	Examples
NVD3.js	https://github.com/novus/nvd3	http://nvd3.org/examples/index.html
Dimple.js	https://github.com/PMSI-AlignAlytics/dimple	http://dimplejs.org/examples_index.html
Plotly.js	https://github.com/plotly/plotly.js	https://plot.ly/javascript

Geographic Maps

The following libraries are geographic visualization libraries that give you customizable map visualization tools:

Library	Source	Examples
D3 Carto Maps	https://github.com/emeeks/d3-carto-map	https://github.com/emeeks/d3-carto-map/wiki/Examples
D3 Geomaps	https://github.com/yaph/d3-geomap	http://d3-geomap.github.io

Third Party Library

These are D3 libraries that can be used with third party frameworks like Angular and React:

Library	Source
Angular-nvD3	https://github.com/krispo/angular-nvd3
React-D3	https://github.com/esbullington/react-d3

http://nvd3.org/examples/scatter.html

https://plotly.com/javascript/gapminder-example/

D3 Vs Plotly

D3

- JavaScript Framework
- Manipulating documents based on data
- Steep Learning Curve
- Integrate with JavaScript, React, Angular, Python and R
- Companies → New Relic, Weebly, and Repro

Plotly

- Built on top of D3
- Strictly a Data Visualization Framework
- Easy to learn
- Integrate with Python, R and MATLAB
- Companies → Wellzesta, Algo Edge Technologies

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References

- https://www.tutorialsteacher.com/d3js/
- https://comparisons.financesonline.com/d3-js-vs-plotly
- https://hackernoon.com/taking-data-visualization-to-another-level-4d1c47bb01a2
- https://comparisons.financesonline.com/d3-js-vs-plotly