Angular + D3

https://github.com/lithiumtech/angular_and_d3

Data Visualization

Sure, big data, but then what?

Edward Tufte

- Luminary of data visualization
- Excellent lectures
- Four fantastic books on data visualization
- Emphasis on data density, respect for the viewer, removing clutter and visual noise
- Great for UI and UX as well

About D3

- Stands for Data Driven Documents
- Library for building dynamic visualizations in JS
- Written by Mike Bostock
- Powers the cool NY Times visualizations
- Primarily uses Scalable Vector Graphics (SVG)

Playing Together

1. The vanilla D3 gauge visualization
2. Setting up angular
3. Building the directive
4. Make it dynamic with jQuery
5. Connecting to the D3 object
6. Handling click events

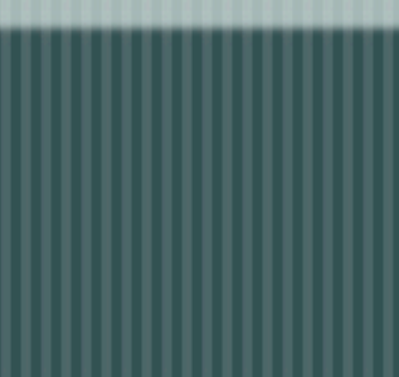
Code Time!

Bring on the code!

Publications in journals over time

Another state budget visualization with open api

Interactive Bible contradictions & bar charts [source]



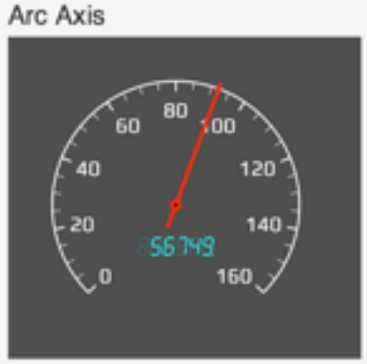
Force Edge Bundling For Graphs

[Source & Docs]

Gauge

Bullet Charts

Arc Axis



Bar chart with tooltips

Playing Together - Part 1

1. The vanilla D3 gauge visualization
2. Setting up angular
3. Building the directive

Jeff Goldblum says:

"Oh yeah, ooh, ah, that's how it always starts, but then later there's running, then screaming."

```
d3.selectAll("p")
    .data([4, 8, 15, 16, 23, 42])
    .style("font-size", function(d) { return d + "px"; });
```

The Battle

```
<p ng-repeat="size in sizes" style="font-size:{{size}}" />
```

Playing Together

4. Make it dynamic with jQuery
5. Connecting to the D3 object
6. Handling click events

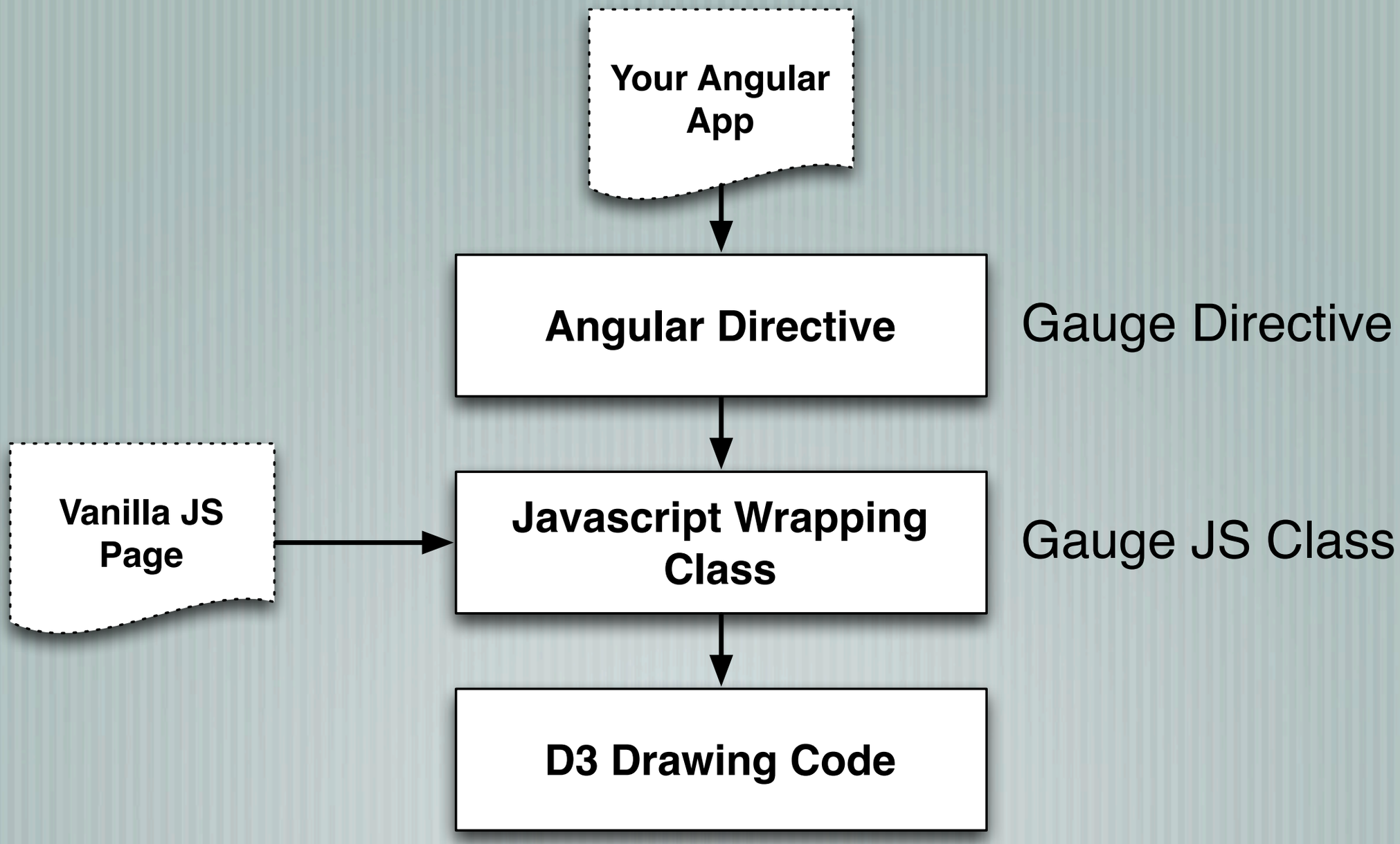
Two Critical Pieces

- Independent scope for each directive
- Getting the element and sending it to D3

Gotchas

- D3 code not always structured as Javascript classes
- D3 code can be pretty complex
- Use click handlers to send back events
- Click handlers will need to call $scope.$digest

Maintainable D3



Hexbin

D3 Resources

- D3.chart
- nvd3 & angularjs-nvd3-directives (requires unique IDs)
- dangle.js
- angular-d3-directives (dependency injected D3)
- angular-treemap on lithiumtech

Polymer

Q&A