

PBO Workshop

Data-Driven Documents With d3

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¹Cornerstone Systems NW

November 2, 2011

Outline

- 1 Introduction
 - Attendee Introduction
 - Browser Poll
- 2 Background
- 3 Resources
- 4 Installation
- 5 Tutorials
 - Hello World
 - Circle and Text
 - Bar Chart
 - 2d Array into HTML Table
 - 2d Array into SVG Bar Chart
 - Axes Elements
- 6 Conclusion

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Introductions

Favorite Tools?

- Database and/or spreadsheet tools
- DSL and/or general programming languages
- Visualization tools

Any web developers?

- Javascript experience?

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- Chrome
- Firefox 3+
- IE9
- Safari
- None of the above?

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jQuery + Protovis \approx d3

- Any jQuery experience?
 - D3 is similar, but can also target the SVG (xml-like image format)
 - They both do some fancy functional programming to make it possible for us to declaratively (and efficiently) reach into the dom tree.
- Any Protovis exposure by any chance?

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Resources

- Github: <http://mbostock.github.com/d3/>
 - API: <https://github.com/mbostock/d3/wiki/API-Reference>
 - Examples: <http://mbostock.github.com/d3/ex/>
 - Source: <https://github.com/mbostock/d3.git>
- Google group
- SVG Specification (v1.1)
- Twitter: *@i3enhamin, @mbostock*

Introductions

Decision Tree

```
if you are comfortable developing in the browser
  if you are a git user
    git clone git@github.com:benracine/d3_cisnet_tutorial.git
  else
    https://github.com/benracine/d3_cisnet_tutorial/downloads
  end
else
  jsfiddle links
end
```

1

¹jsfiddle examples still need to be done

Ready to Get Started?

Canonical Test

- Navigate to an exercise file
- Open up your browser's web developer tools
- Go to console
- Enter d3 and you should see 'object' in the response

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Tutorials

exercise-01.html

- Hello world only using HTML (i.e. no SVG)
- Concepts
 - Sourcing d3 file
 - Unified d3 namespace
 - css3 selector notation
 - Element, class, id, attribute, descendants, etc.
 - `d3.select("")` \approx `$("")` \approx `jQuery("")`
 - Cascading/callbacks

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Tutorials

exercise-03.html

- A circle with text
- Concepts
 - SVG elements
 - Appending
 - Transforms
 - Namespaces
 - Attr
 - Appropriate use of namespace variables

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Tutorials

exercise-10.html

- Bar Chart with HTML Elements
- Concepts
 - Identity function
 - Functional programming
 - Data binding selections
 - Update
 - Enter
 - Exit
 - g namespace

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Tutorials

exercise-11.html

- 2d Array into HTML Table
- Concepts
 - Styles
 - Scales

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Tutorials

exercise-12.html

- 2d Array into SVG Bar Chart
- Concepts
 - RangeBands
 - Linear vs. ordinal scales

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Tutorials

exercise-13.html

- Axes Elements

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Tutorials

Extras

- css-hover
- d3 event-based transition
- Transition : just a non-instantaneous transformation
 - Duration
 - Delay
- Ease
- Interpolate
- Tween

Conclusion

- Blah