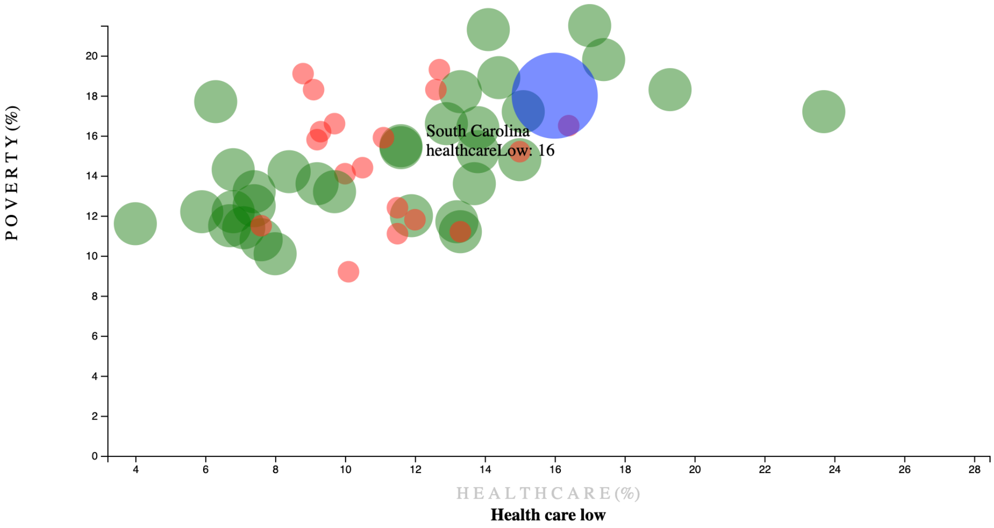
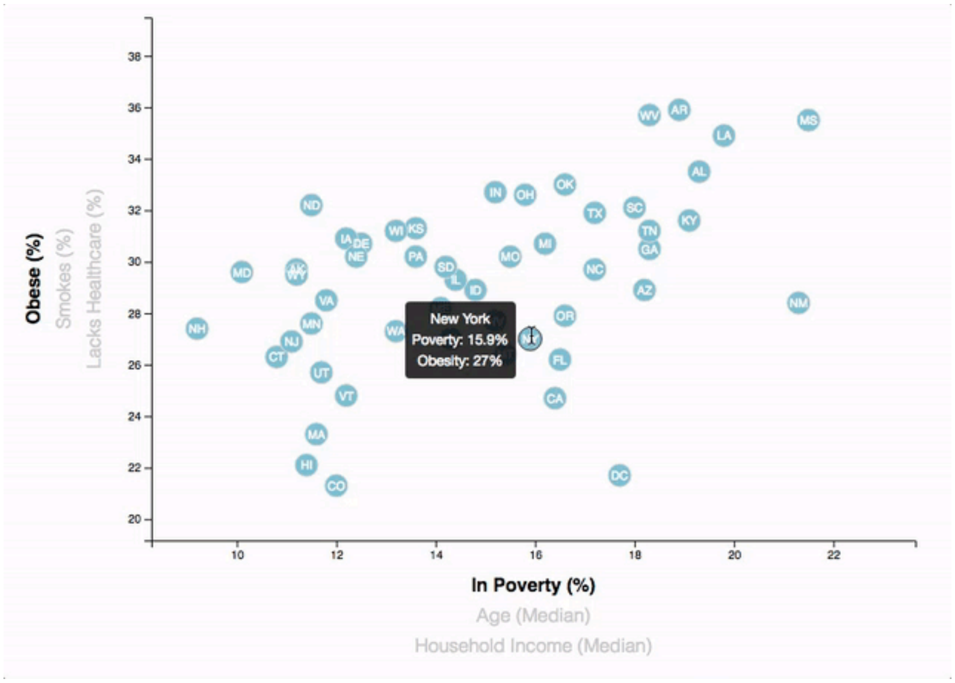
From: Piruz Alemi
Subject: Report on Advance D3 Visuals
Date: Feb 24th, 2020

Run: http://127.0.0.1:5500/alemiToolTips.html



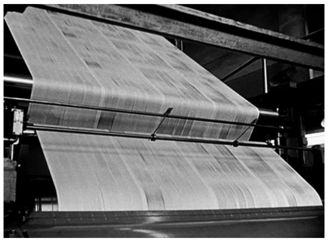


Background

Welcome to the newsroom! I've just accepted a data visualization position for a major metro paper. I was tasked with analyzing the current trends shaping people's lives, as well as creating charts, graphs, and interactive elements to help readers understand our findings.

The editor wants to run a series of feature stories about the health risks facing particular demographics. She's counting on me to sniff out the first story idea by sifting through information from the U.S. Census Bureau and the Behavioral Risk Factor Surveillance System.

The data set I checked was based on 2014 ACS 1-year estimates: https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml, but she also left me free to investigate a different data set. The current data set included data on rates of income, obesity, poverty, etc. by state with some MOE which stands for "margin of error."



Before I Began

I did some installations:

Installing

If you use NPM, `npm install d3-axis`. Otherwise, download the latest release. You can also load directly from d3js.org, either as a standalone library or as part of D3 4.0. (To be useful, you'll also want to use d3-scale and d3-selection, but these are soft dependencies.) AMD, CommonJS, and vanilla environments are supported. In vanilla, a `d3` global is exported:

1. I found Complete Bar Charts, In D3-Activities / 2 + the following sites very useful:
2. See https://www.d3indepth.com/enterexit/
3. I checked my sources, among them: https://www.d3indepth.com/scales/
4. See this example of create D3 Band Scales & Bottom Axes.
   a. I Remembered that the domain and range must both be arrays.
5. For assistance with axis creation with D3, see the d3-axis documentation.
6. On scaling see: https://www.d3indepth.com/scales/
7. For line generating see: https://www.d3indepth.com/shapes/#line-generator
8. https://github.com/d3/d3-shape#line
9. For locale.parsing see: https://github.com/d3/d3-time-format/blob/master/README.md#locale_parse
10. https://github.com/d3/d3-time-format/blob/master/README.md#locale_format
11. https://observablehq.com/@d3/line-chart
12. https://observablehq.com/@d3/scatterplot-with-shapes?collection=@d3/d3-shape
13. http://bl.ocks.org/Caged/6476579
14. https://stackoverflow.com/questions/44427544/embed-a-svg-shape-in-d3tip-tooltip
15. For adding axes: http://www.d3noob.org/2012/12/adding-axis-labels-to-d3js-graph.html
16. https://github.com/Caged/d3-tip
17. On Transitions: https://bl.ocks.org/d3noob/899a0b2490318a96f9ebd40a5a84e4a7
18. On d3.js Tips & Tricks: https://leanpub.com/d3-t-and-t-v4
19.

1. Created a new repository for this project called `D3-challenge`.
2. Cloned the new repository to my computer.
3. Inside my local git repository, created a directory for the D3 challenge. Used the folder name to correspond to the challenge: **D3_data_journalism**.
4. This work utilized both **html** and **Javascript** so I made sure to add all the necessary files. These were the main files to run for my analysis.
5. I then Pushed the above changes to GitHub

My Task

Level 1: D3 Dabbler

1. I created a scatter plot between two of the data variables such as `Healthcare vs. Poverty` or `Smokers vs. Age`.

2. Used the D3 technique, I created a *scatter plot that represents each state with circle elements.*

3. I coded the above graphic in the `app.js` file —made sure I pulled in the data from `data.csv` by using the `d3.csv` function. My scatter plot appeared like the image at the top of this section.

   - *Included state abbreviations in the circles.*
   - Created and situated my axes and labels to the left and bottom of the chart.
   - Note: I needed to use `python -m http.server` to run the visualization. This hosted the page at `localhost:8000` in your web browser.

Level 2: Impress the Boss (Optional Challenge Assignment)

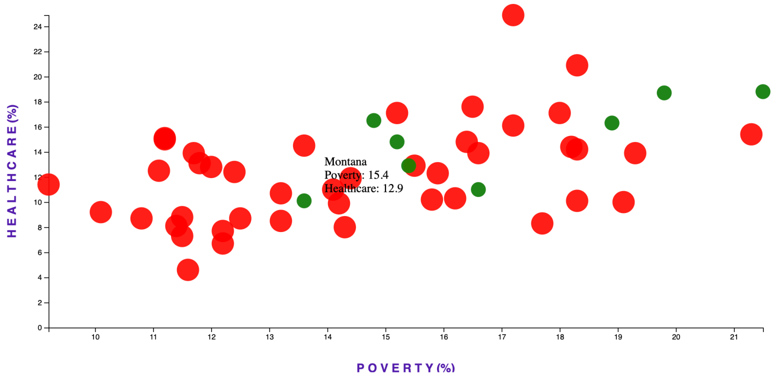
- Why make a static graphic when D3 lets us interact with our data?

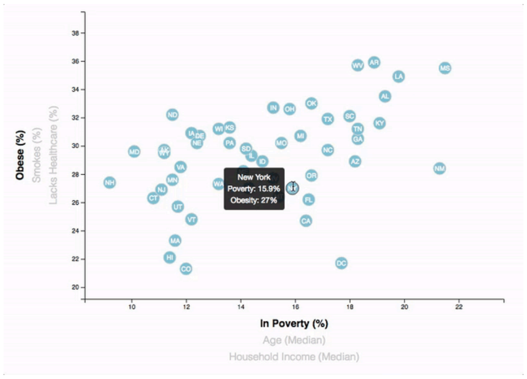
1. More Data, More Dynamics

I was going to include more demographics and more risk factors. I Placed additional labels in my scatter plot and gave them click events so that my users can decide which data to display.

I Animated the transitions for my circles' locations as well as the range of my axes. I did this for two risk factors for each axis. Or, for the extreme challenge, I created three for each axis.

- Hint: *I Tried binding all of the CSV data to my circles.* This allowed me to easily determine the x or y values when I clicked the labels.





2. Incorporate d3-tip

While the ticks on the axes allow us to infer approximate values for each circle, it's impossible to determine the true value without adding another layer of data.

Enter tooltips: developers can implement these in their D3 graphics to reveal a specific element's data when the user hovers their cursor over the element. I Added tooltips to my circles and displayed each tooltip with the data that the user has selected. I Used the `d3-tip.js` plugin developed by Justin Palmer—which was already included the plugin in my assignment directory.

- I Checked out David Gotz's example to see how we should implement tooltips with d3-tip.

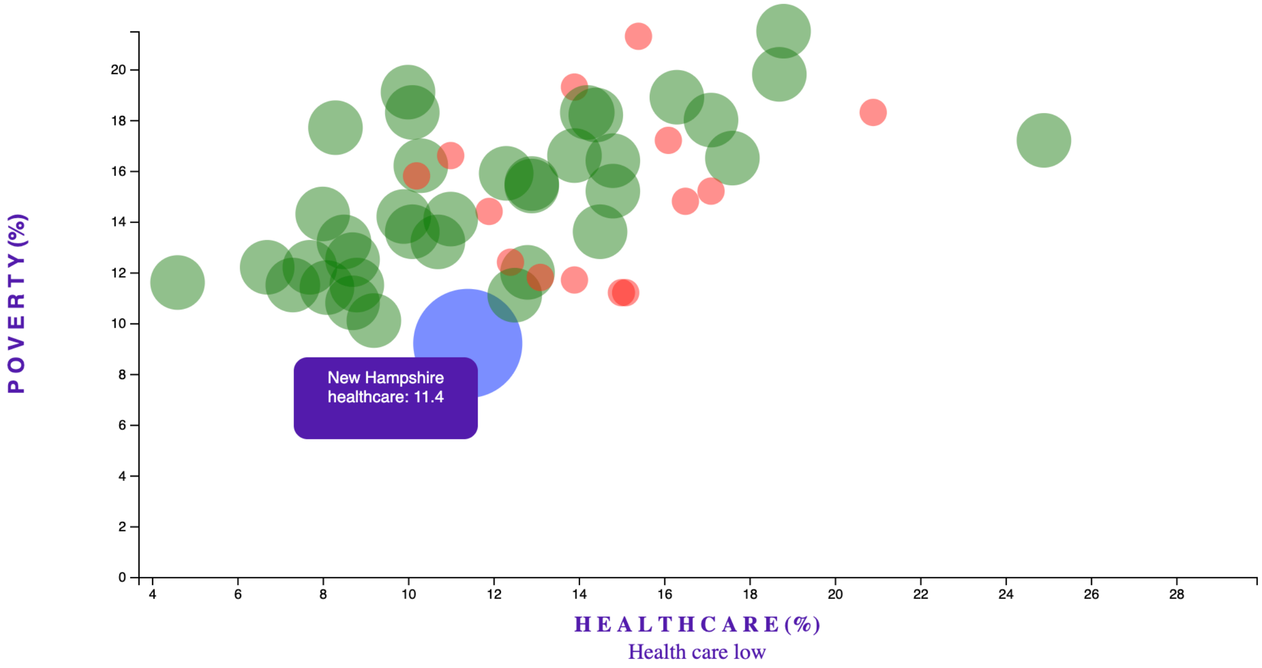
Assessment

The final product was assessed on the following metrics:

- Creation of a **new** repository on GitHub called `D3-Challenge` (note the kebab-case).
- Completion of all steps in chosen level
- Coherency of scatter plot (labels, ticks)

- Visual attraction
- Professionalism

I had some luck & this was the result!


POVERTY(%)
HEALTHCARE(%)
Health care low
New Hampshire
healthcare: 11.4