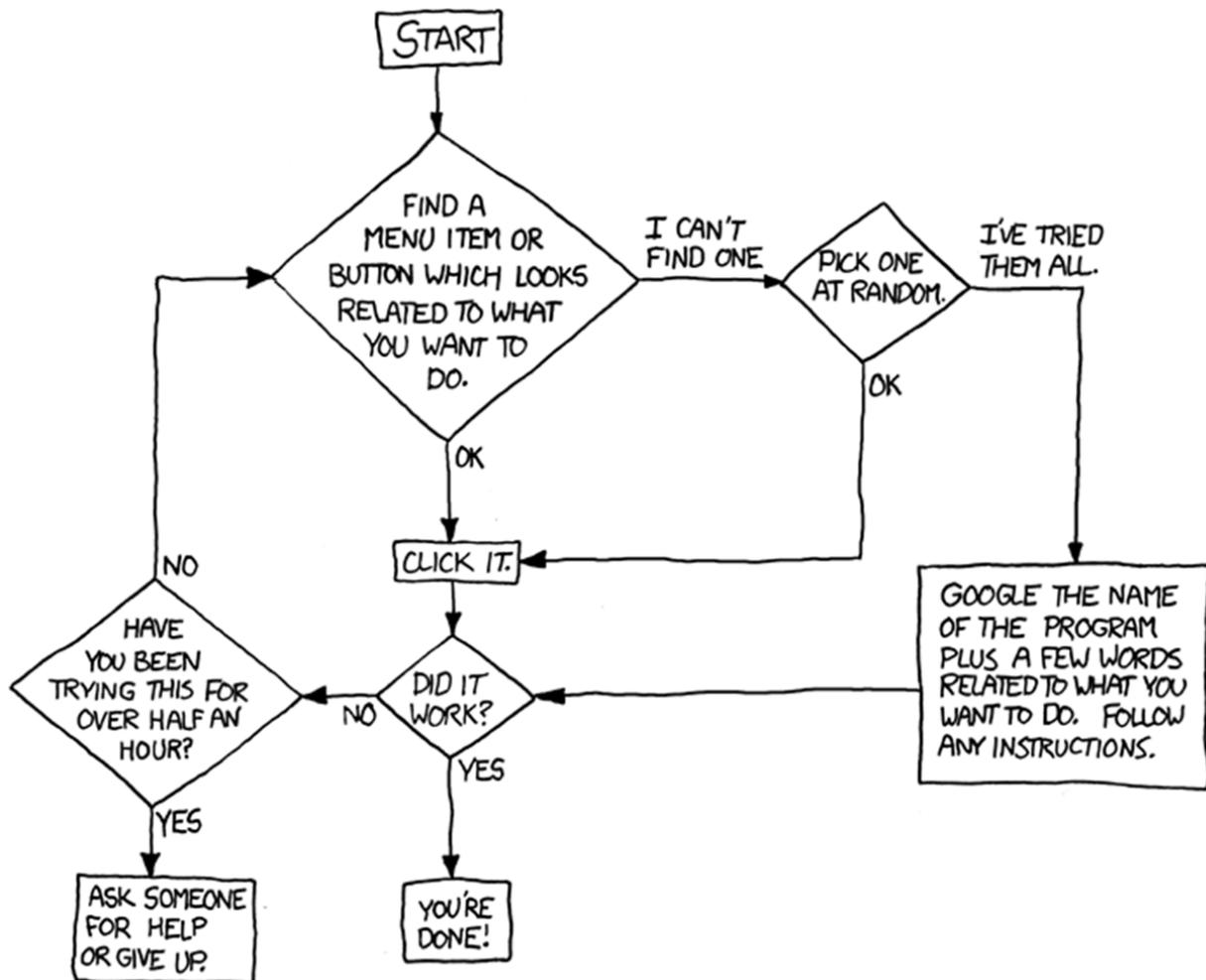


GARP 0317: Cookbook 28 November 2012

Overview

1. Cool Stuff!
2. Map this - better!



Let's Join Tables!

http://imgs.xkcd.com/comics/tech_support_cheat_sheet.png

1) Cool Stuff!

Storm surge flooding (actual and predicted) from Hurricane Sandy

The predictions matched reality – that crazy thing called ‘science’ actually works!

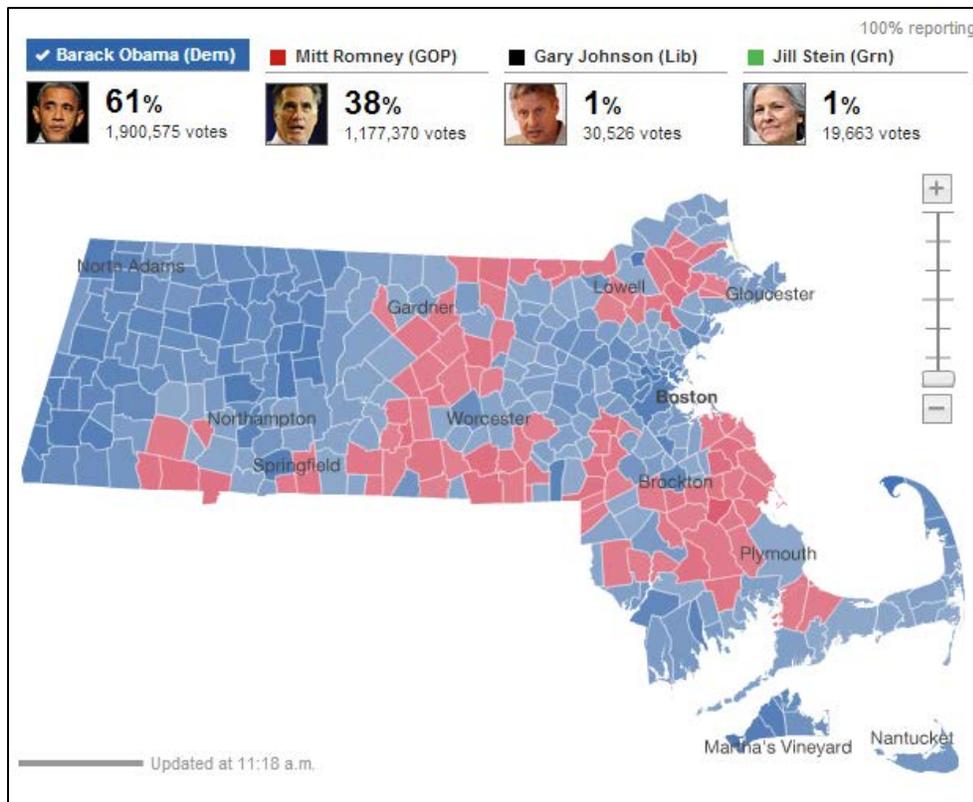
<http://project.wnyc.org/flooding-sandy-new/index.html>

What Could Disappear...

Extreme scenarios: 5, 12, 25 feet sea level rise

<http://www.nytimes.com/interactive/2012/11/24/opinion/sunday/what-could-disappear.html?ref=sunday>

2) Map this – better!



We have seen this map – let’s make our own!

We can do this better!

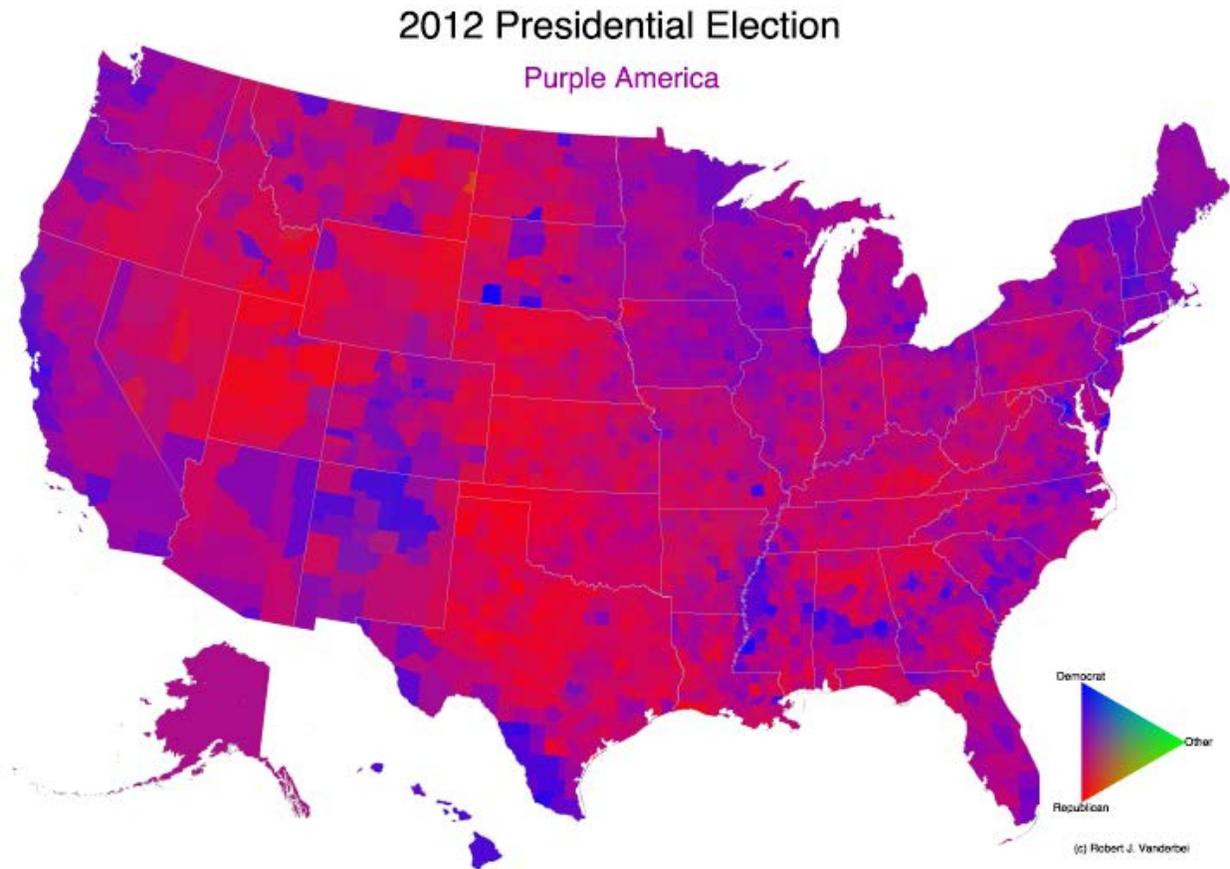
This map does not have a legend!

The cities are colored red or blue to indicate whether a majority of their voters voted for the Republican candidate, Mitt Romney, or the Democratic candidate, Barack Obama, respectively. This that the map fails to take account of the population distribution. It fails to allow for the fact that the population of the red cities is on average lower than that of the blue ones. The blue may be small in area, but they represent a large number of voters, which is what matters in an election.

One way to improve the map and reveal more nuance in the vote is to use not just two colors, red and blue, but to use red, blue, and shades of purple in between to indicate percentages of votes. This could be a linear or a non-linear scale.

For example, you could use a color scale that ranges from red for 70% Republican or more, to blue for 70% Democrat or more. This is sort of practical, since there aren't many cities outside that range anyway, but to some extent it also obscures the true balance of red and blue.

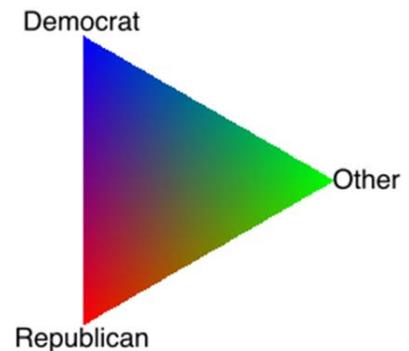
Here's another approach that uses a color triangle to also show the other independent candidates.



Source: <http://www.princeton.edu/~rvdb/JAVA/election2012/>

Watch the changing colors of the United States between 1960 and 2012:

http://www.princeton.edu/~rvdb/JAVA/elections/AllYears_1960_2012.gif



The 5-Step Process

1. **Data Acquisition**

The data you want often already exists – if you can find it! Here the spatial data were available from MassGIS and the attribute data from the Boston Globe.

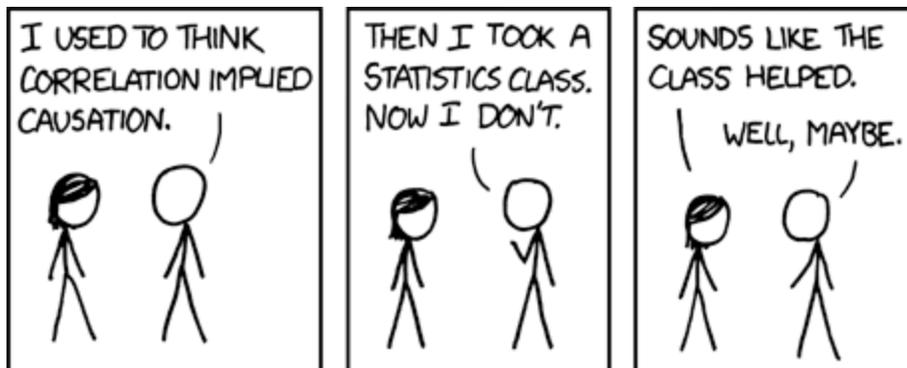
2. **Data Manipulation/Organization**

Very often you need to manipulate data sets so they become compatible for your analysis. Here we had to join two data sets.

Here we are NOT changing the data, but merely reorganizing it!

3. **Data Analysis**

Herein lays the full power of a GIS – analyze and quantify spatial patterns. Here the analysis was simple and involved calculating sums and percentages.



4. **Data Visualization**

Here as a choropleth map, but you could also visualize your data as bar charts, summary tables, videos, text, etc. – ideally use all of the above to leverage their respective advantages.

5. **Sharing**

Share your visualizations and data with the rest of the world!

⇒ ***Map this sequence as a concept map before you start clicking away!***

Colors and Choropleth Maps

You decide: Colors, Sorting, Classification Systems, Break-Points, etc.

Don't lie with maps unless you want to!
Don't accept the ArcGIS defaults!

<http://www.westfield.ma.edu/cbraun/resources/gis-resources/>