

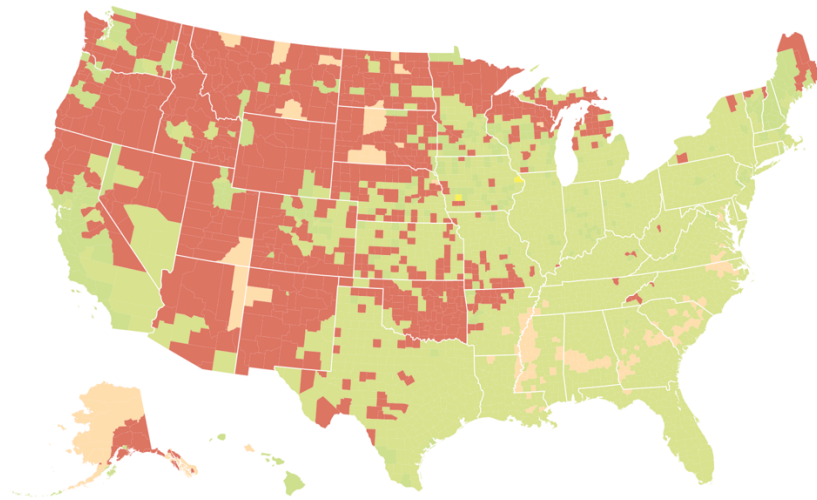
Mapathon

You should submit a Google doc containing screenshots and your write-up for each step to the Discussion board for Mapping & Cartography.

Note: This activity uses D3 v3. Be aware that the syntax for namespaces changes with v4.

Step 1)

You've been hired to help a company make some maps of data they've collected for their website. The data variables they would like to create maps for can be found in `census_population.tsv`. They previously hired someone to help them get started with creating a D3 map, which you can view by loading `map1.html`. You should see something like this:



What kind of color scale is being used? Look at the data. Is the color scale appropriate for the data? Why or why not?

Improve the color scale, either by choosing a different palette of the same type or a new type altogether. Hint: you can find various type of expert-created palettes on colorbrewer2.org. You may also want to check out <https://bl.ocks.org/mbostock/5577023> for how to call colorbrewer palettes in D3.

Take a screenshot of your new color scale and explain why its better. Hint: Recall the chromatic vision simulator available at: <http://asada.tukusi.ne.jp/webCVS/index.html> which might help you make your argument for why yours is better.

Step 2)

The company is also interested in making maps of quantitative variables they have collected. Load map2.html.

Can you improve the color scale being used in the map? Assign a new palette that is more appropriate for the data. Take a screenshot of your new map and briefly describe why the color has been improved.

Step 3)

What kind of data classification is being used in map2.html? (Hint: look at the color scale code.)

If you look at the maximum value in the data set, does it match the maximum value defined for the scale domain? Try setting the scale domain to use equally spaced values based on the actual range of values observed (your bins don't have to perfectly match the data domain, e.g., it's fine to round so the bins are human readable as long as they mostly match the true data domain). How does the map appearance change? How might you explain the trade-offs involved in this choice to your client?

Step 4)

Now try changing the classification to a different type, like a quantile classification. Take a screenshot and describe in your own words how the appearance of the map changes with the new classification. What is different compared to the scales used in the previous step?

Step 5)

In the video lectures you learned how to choose a type of map based on where the phenomena occurs (discrete or continuous) and how the phenomena changes (abruptly or smoothly). (Recall the diagram below):

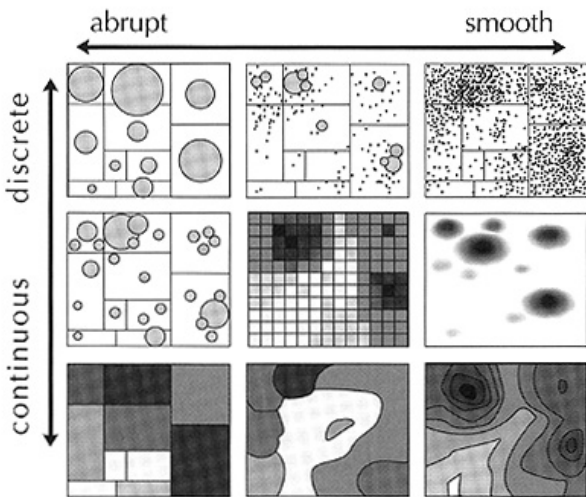


Figure 3.24 Matching map types to data models. Reproduced from MacEachren (1992) with permission.

The quantitative variable you are working with has an unemployment value for each county. Do you think a choropleth map (which is what is used in the example code) is a better default choice than a graduated symbols map (top left corner)? Why or why not?

Step 6)

Take a look at the other variables in the `census_population.tsv` file used by `map1.html`. Imagine you could get the data at different levels of geographic resolution (not just county). Are there any variables that you would assign to the upper right corner of the diagram? What about the upper left corner?

Step 7)

Consider the data shown in the map in step 1 again. The company you are making maps for has an alternative version of the data they would also like to show. Change the code in `map1.html` so that the variable called `"majority_group"` is shown instead. Both maps are based on the same data, but the impression that each provides is very different. Try to come up with a way to show both variables in a single map. Describe how you might do this and what the design trade-offs would be, if any.