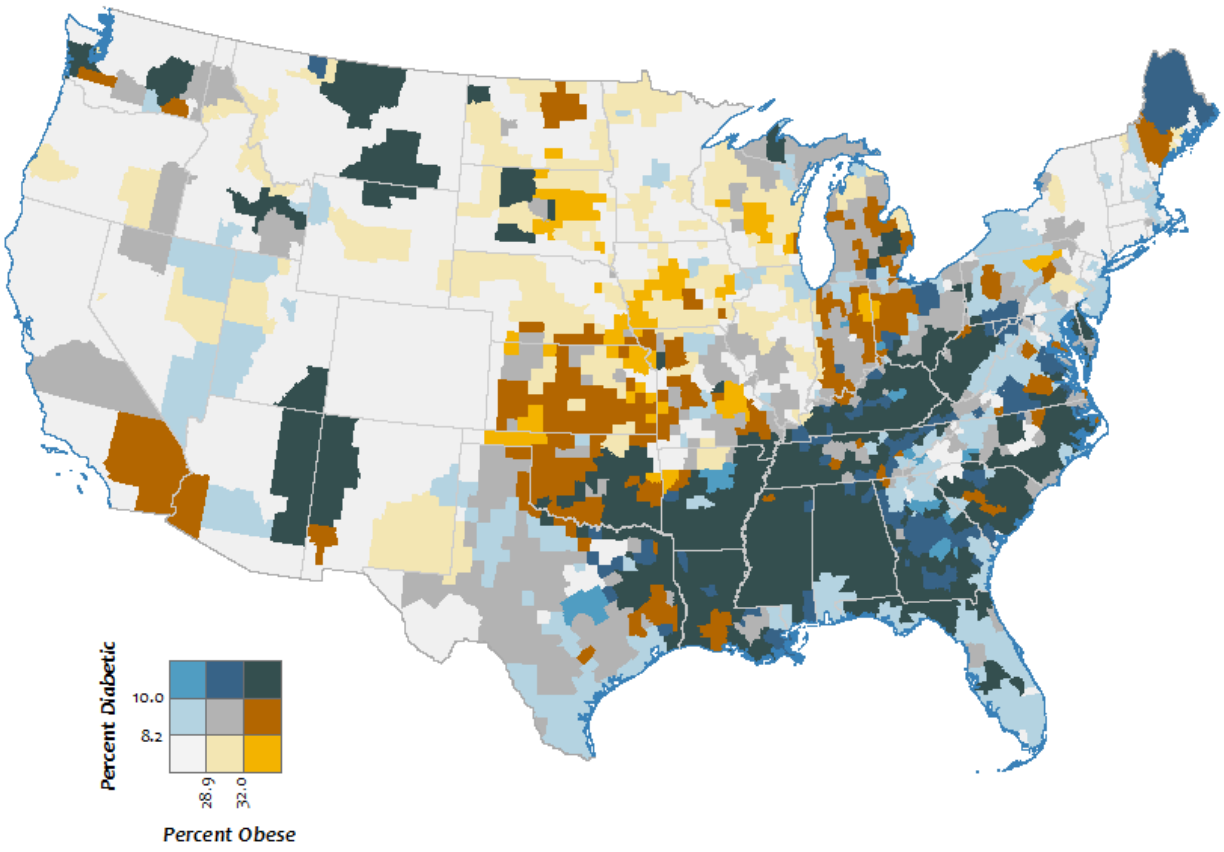
W5 Exercise: Bivariate Mapping

OBJECTIVE. Map two different themes on the same map canvas. The idea here is that the two variables could somewhat be correlated. Instead of having two maps side by side, we can 'combine' these maps together. Total: 40pts.

In this exercise, you will us ArcGIS Pro to prepare a bivariate map. Such map portrays two variables, often related to one another. An example of such a map is given below, for rates of diabetes and obesity (2009), at the county level.



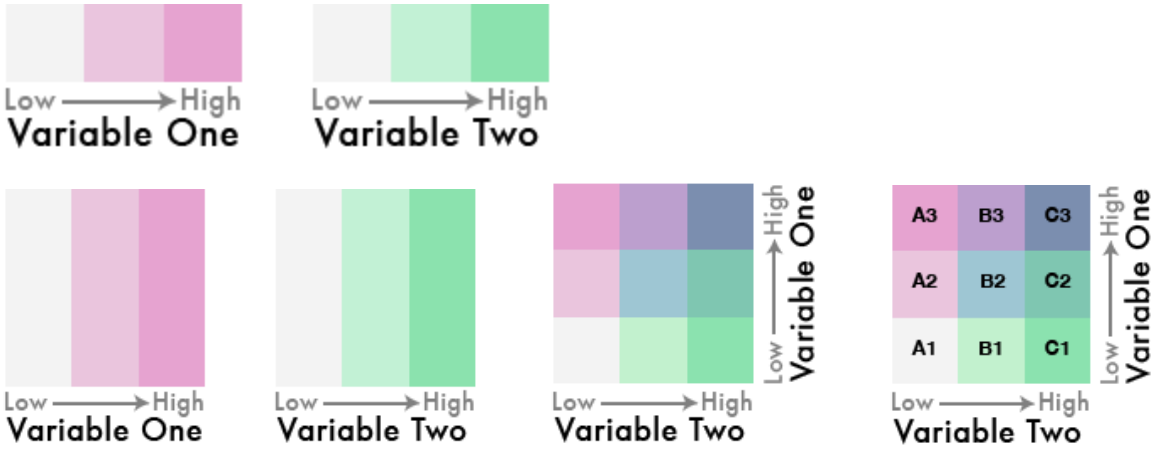
Step 1. Use your own dataset, or the one provided by myself on canvas. Identify two variables in your dataset that can be normalized.

Step 2. Using a quintile-type classification (or another one of your liking), reclassify your data into 3 to 4 categories max (think that 3 categories per variable will generate 9 color combinations, 4 will generate 16, etc…).

Add two columns ['var1_rcd' and 'var2_rcd'] in your ArcPro datafile, and recode your data into three categories, based on the quintile breaks for each variable.

Step 3. Add a new column of type text, call it 'combined'. Combine both recoded scores into a unique combination, using the operator '&'. This will generate combination of the recoded values of both variables.

Step 4: Choosing an appropriate color scheme is difficult. Further, you will need to explicitly enter the RGB (or HSV) value for each of the combined value. The principle is demonstrated below.



Other examples include (the number are the HEX color values).
A decoder is found here: https://www.webpagefx.com/web-design/hex-to-rgb/

Step 5: Prepare the map, add the legend (so it eventually looks like the one from the map on page 1). You will need to convert the legend to graphics, ungroup, and align the different elements. Add a scale bar, a title, and some text for the legend (e.g. the categories). Export the map, include it in a word document, and briefly describe the pattern that you see.