Google Fusion Tables Tutorial 3 of 3:
Merging Fusion Tables and Gradient Maps

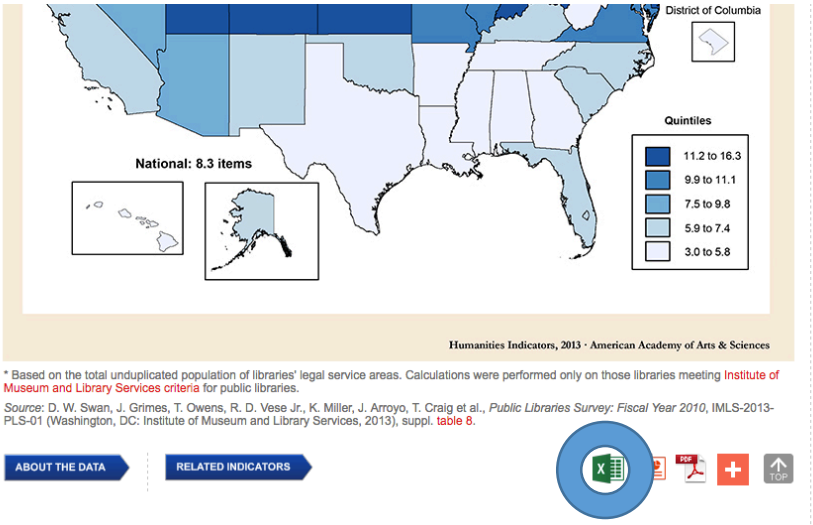
Getting Started

This tutorial is the third in a series. For instructions on how to start a Google Fusion table, please see "Google Fusion Tables Tutorial 1: Creating Maps with Google Fusion Tables."

Google Fusion Tables has the handy feature of allowing you to combine different datasets together from multiple sources – the term 'fusion tables' comes from this feature. To make a merge, you'll need to find two datasets that have one column of data in common. In this case, we're going to combine a table of state boundaries with a table of state data on public library book circulation per capita by state to show these trends on a map.

To begin, you need to download data on library circulation trends in 2013 found at a site called Humanities Indicators: http://www.humanitiesindicators.org/content/indicatordoc.aspx?i=430

Beneath the map, click on the Excel icon to download the data table. Save this file to your computer.



Before loading the file you'll need to open and clean the Excel spreadsheet of information extraneous to the table data. Open the file you just downloaded, and delete lines 55 down to the very bottom. (Line 55 has the National average, which won't be needed when mapping state data).

Merging Fusion Tables

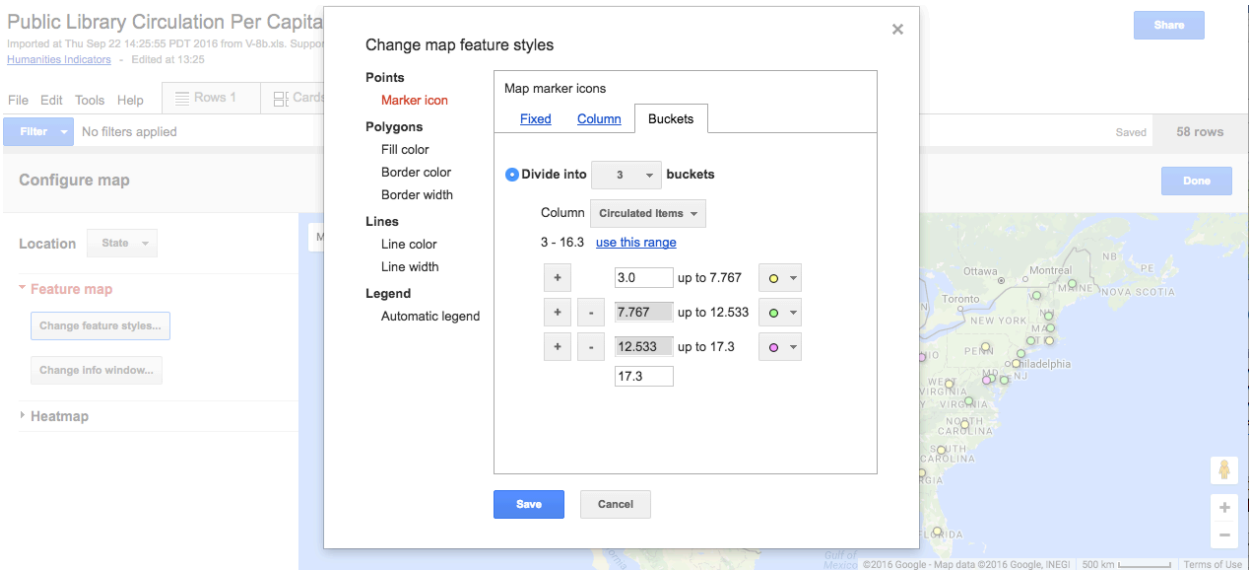
Now start a new Google Fusion Table.

Choose the file you just downloaded, then click ‘Next’. At the following window, you’ll need to change the drop down menu next to ‘Column names are in row’ to 2. Click ‘Next.’ Now you can name your Fusion Table and attribute the dataset, adding the source link and a description if you want. Click ‘Finish.’

To clean the data, you can rename the first column as ‘State’. To do this, click on the arrow next to the column title to bring up a drop down menu and click ‘Change.’ At the next page, add a title. Here you can also indicate that the column contains location data in the drop down menu next to ‘Type.’ (However Fusion Tables has already detected that the state names are geographic entities – you can see this because the cells in the first column are highlighted in yellow.)

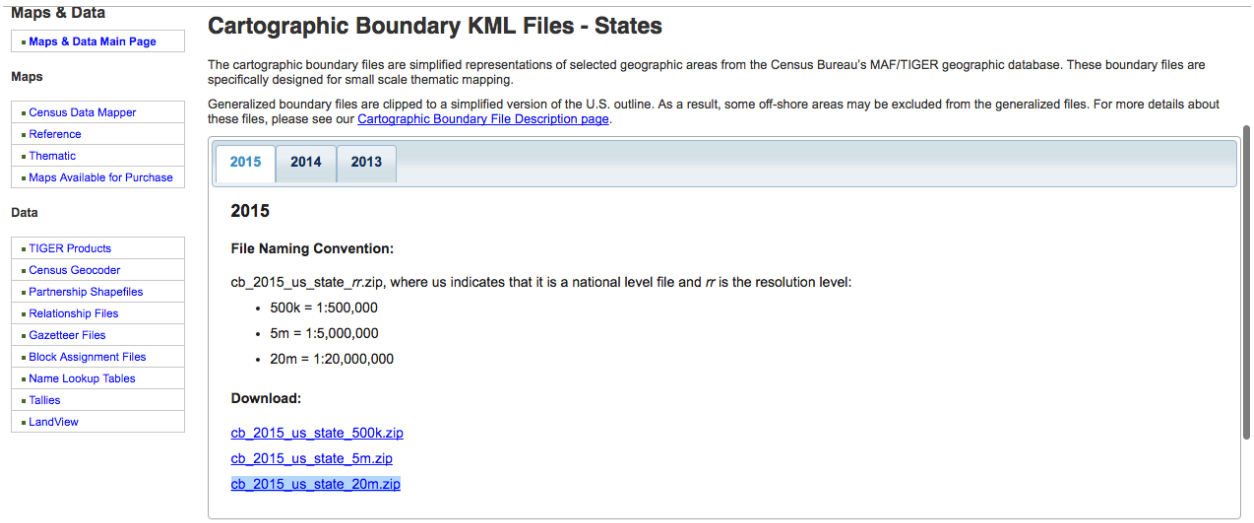
Click on the Map tab. Fusion Tables will take a few seconds to geocode the state names. When finished, you can see the markets for each state – click on one and you get the State’s name and its per capita circulation rate.

As you explored in the first Fusion Tables tutorial, you can use the map markers to show distinctions in data across the states. Click on the ‘Change features style…’ button, then on the buckets tab. You can divide into 3 buckets, then click ‘use this range.’ Click ‘Save.’



While the marker colors make it clear that there are ranges in book circulation across the states, we can make comparisons across states much easier to read at a glance by bringing in KML cartographic data for each state. KML stands for Keyhole Markup Language – an XML format used to display geographic data.

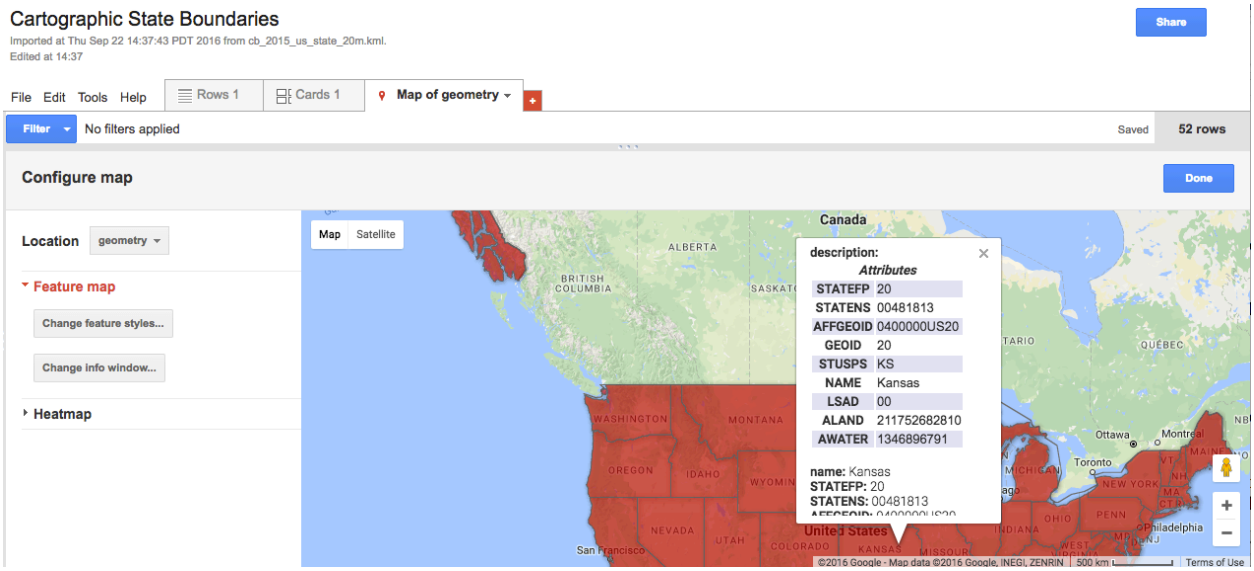
To get this data, leave this Fusion Table for now and go to this webpage of cartographic boundary files for states on the U.S. Census site:
https://www.census.gov/geo/maps-data/data/kml/kml_state.html



Download the file cb_2015_us_state_20m.zip. You'll need to click on the zip file to expand it into a folder. In the folder you'll find a file named cb_2015_us_state_20m.kml.

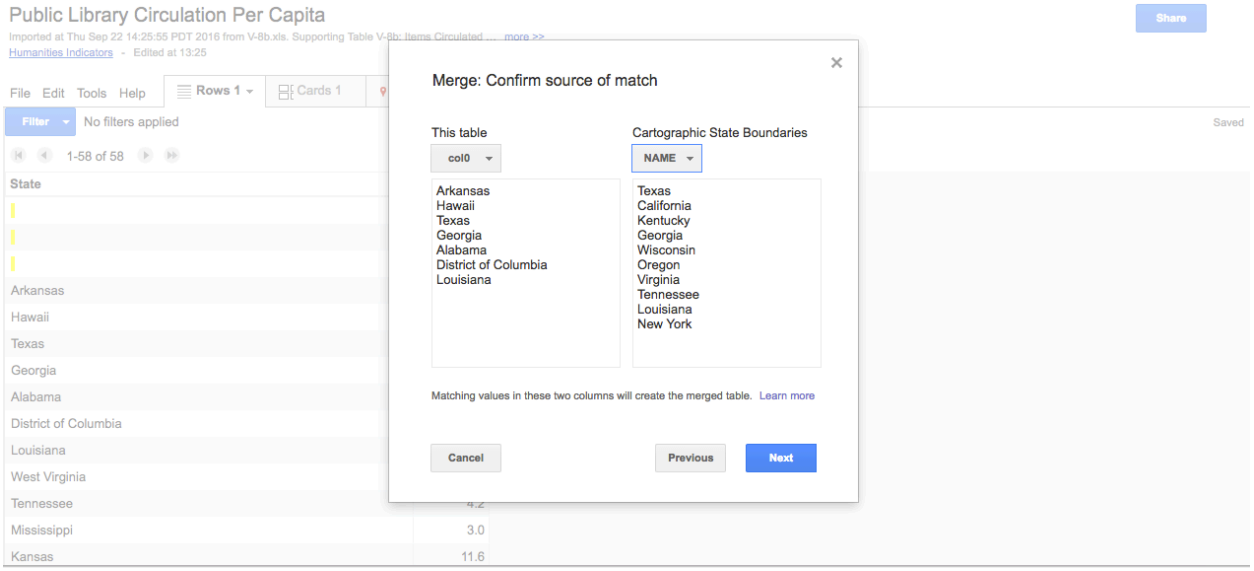
Now create a new Fusion Table and upload your KML file and click 'Next'. At the following window click 'Next' as well. Name your new Fusion Table and add attribution details if you want, then click 'Finish.'

Go ahead and click on 'Map of geometry' – you can now see a red map of the US. Click on any state, and it brings up the KML data attributes.



Now you're ready to merge these two sets together. Go back to your book circulation Fusion Table and click the 'File' tab, then 'Merge…' The following window will give you options of other Fusion Table or Google Drive datasets you've recently uploaded. Find your new Fusion Table of KML data and click 'Next.'

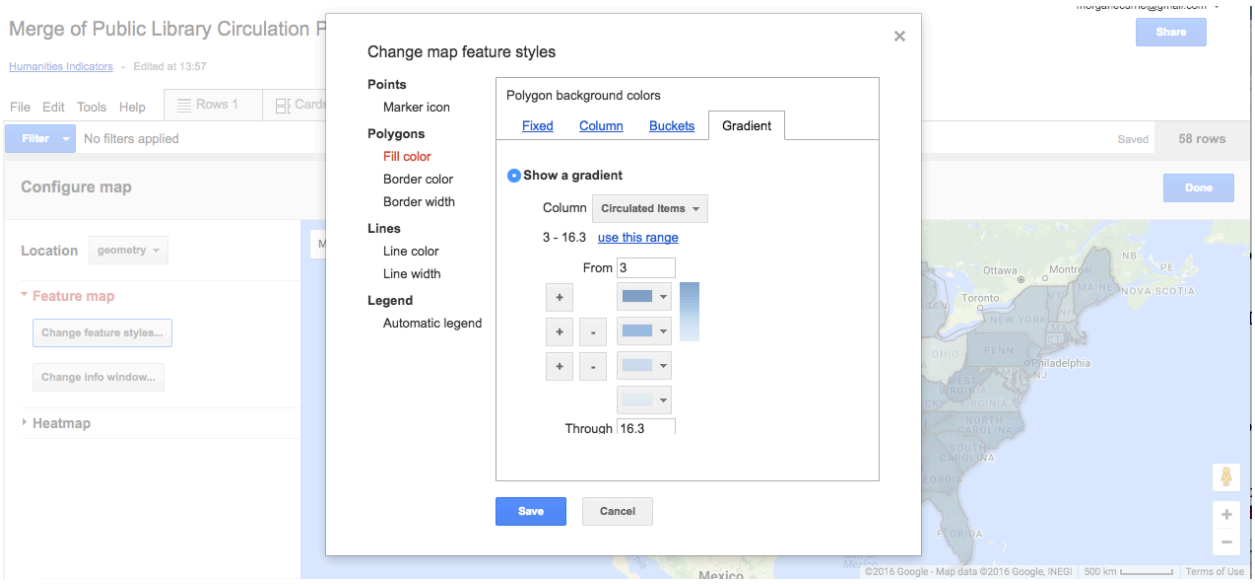
At the next window, you need to find the data that matches both tables, in this case the state names. For your cartographic data, that column is called ‘Names.’ Make sure you’ve found a match, and click ‘Next.’



At the next window, click ‘Merge.’ Fusion Tables will then create a third Fusion Table that combines the columns from each dataset. Click on the link provided, and that’s it! You now have Fusion Table with KML data linked to library circulation data.

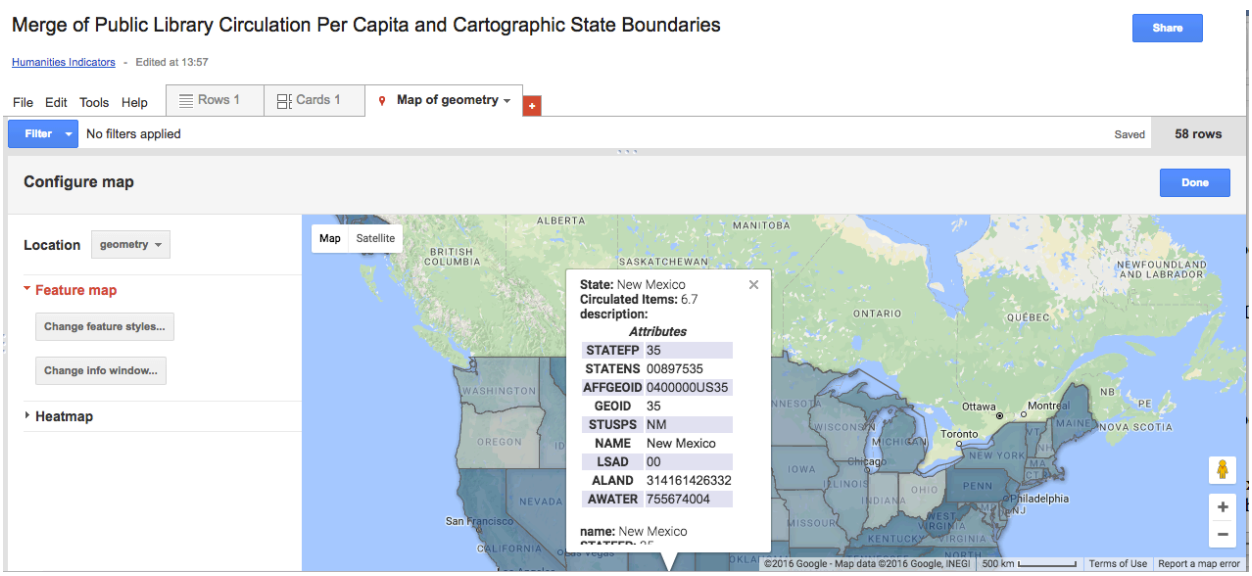
Making Map Gradients

We now have a few more adjustments to make to our map. Go to the ‘Map of Geometry tab,’ then click ‘Change feature styles…’ Under ‘Polygons’ click ‘Fill color’. Click on the new tab that appears called ‘Gradient.’ Click the circle next to ‘Show a Gradient’ and make sure the column selected is ‘Circulated items.’ Click ‘Use this range’. If you want, you can customize the colors by clicking on the arrows next to the color bars – below the map shows gradients of blue. Then click ‘Save.’



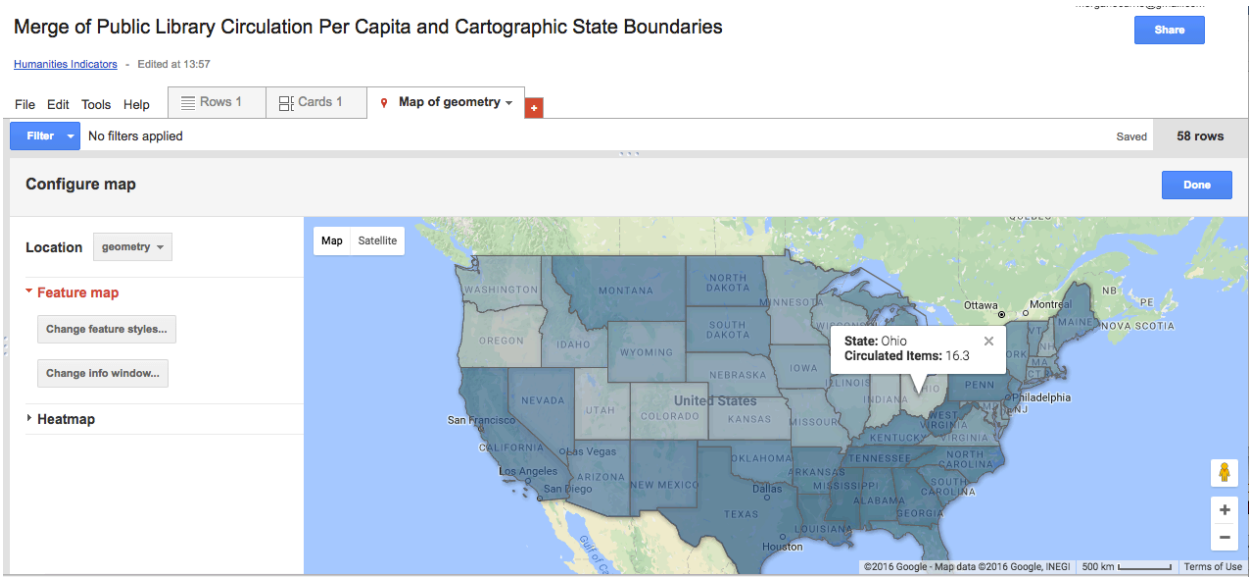
You now have a map that shows quite clearly the differences of library book circulation across all the states.

One last adjustment you may want to make. When you click on each state, you get a text window containing all of the KML data.



To clean up the text, click the ‘Change info window’ button and unclick every button except for ‘State’ and ‘Circulated item.’ Click ‘Save.’

Your map now has a clean, easy-to-read look and is ready to share!



Credits:
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