

Making a Choropleth map with Google Fusion Tables

Choropleth map is a *thematic map* based on predefined aerial units. Its areas are coloured or shaded to show the measurement of the statistical variables displayed on the map. These maps usually provide a better visualization of how measurements vary across geographic areas. One tool to create and share choropleth map is **Google Fusion Tables**. It is a very user-friendly tool and it helps users to create an online interactive choropleth map in the most efficient method. Two sample maps made using Google Fusion Tables are shown below:

 **Mapping murder around the world**

<http://www.guardian.co.uk/news/datablog/interactive/2011/oct/10/unitednations-development-data>

 **Mapping population densities by the block**

<http://blogs.montrealgazette.com/2012/02/10/mapping-population-densities-by-the-block/>

The major procedures of using this software are outlined as shown below:

- Apply an online tool to import a zipped shapefile into Google Fusion Tables
- Import an Excel spreadsheet into Google Fusion Tables
- Merge the tabular data with KML file
- Visualize the data as a choropleth map
- Save or Share the map with others

Two files are needed for you to complete this tutorial and learn the steps. One is a zipped shapefile containing the census tract (CT) boundary for the Kitchener Census Metropolitan Area (CMA). The zipped file includes prj, shp, shx and dbf files which are all in one folder. The other one is an Excel spreadsheet containing demographic information (total population, population age (0-14 and median age) for each CT in Kitchener CMA.

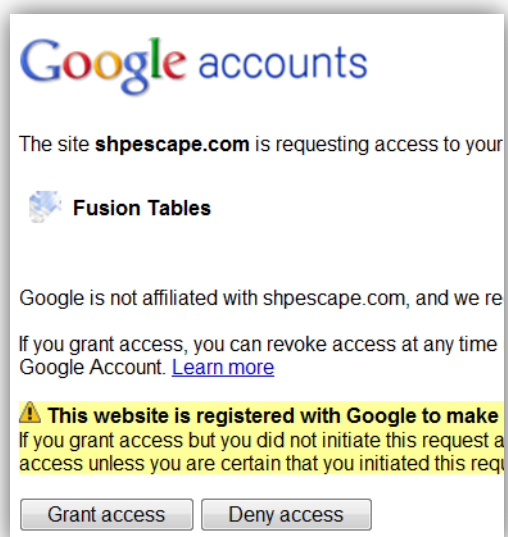
Part 1 Import a shapefile into Google Fusion Tables

Aerial units are incredibly common in shapefile format but the only geographic file format that Google Fusion Tables can import is KML. There are a few options to make this possible. The easiest method is to use a Shapefile to Fusion converter called **Shapescape** (<http://www.shpescape.com>). The steps are given below:

1. Open up the Shapescape with an internet browser and click 'Continue'.



2. Sign in with your Google Account to grant access to the fusion tables as required.



3. Upload the zipped shapefile (CT_KitchenerCMA.zip) into Fusion Tables so it is ready for import.

Upload a zip archive of one (or more) shapefiles for import into Google Fusion Tables

Upload a Zipped Shapefile: C:\GIS\Google Fusion Table

Advanced Options

Notes:

- Your zipfile archive must include a *prj*, *shp*, *shx*, and *dbf* file for each shapefile
- You are limited to 200MB in total storage on Google Fusion Tables
- This application will upload a maximum of 100k rows
- If you have questions, leave a [comment](#)

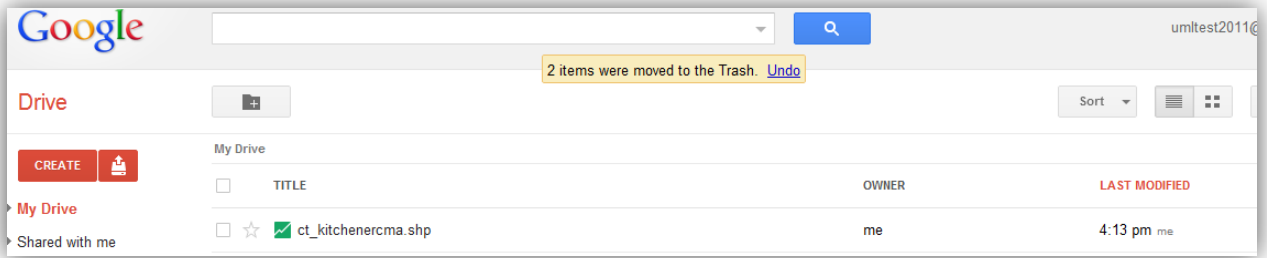
5. When you see 'Status Complete', the upload and processing may take a while when finished, the imported file will be assigned a Fusion Table ID (4761538).

```
ct_kitchenercma.shp
Status Complete
Total Rows 101
Rows Processed 101
Rows Inserted 101
Fusion Table 4761538
```

Part 2 Import an Excel spreadsheet into Google Drive

You will import an Excel spreadsheet containing the demographic information.

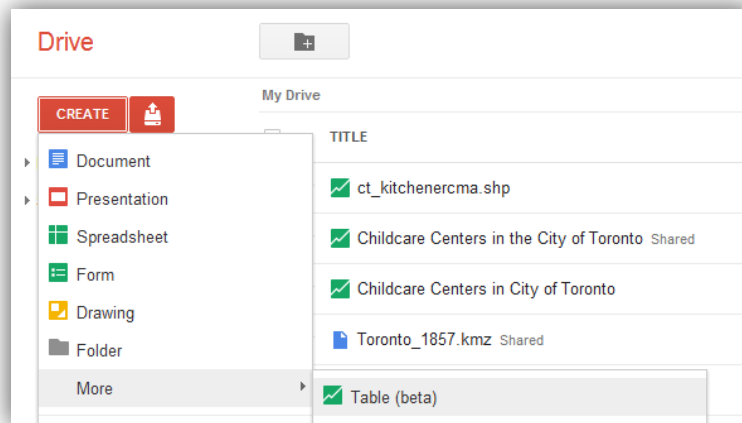
1. Go to Google Drive or Google Docs, if not available.



You will notice 'ct_Kitchenercam.shp' table just imported in the Google Drive.

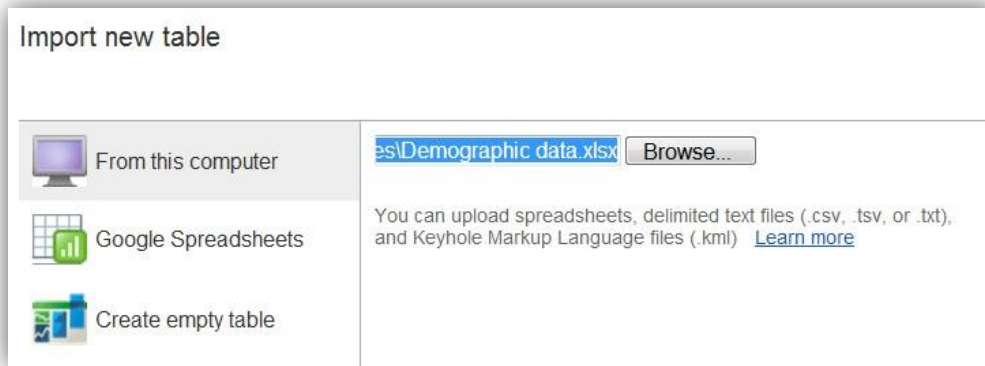
2. Create a new Google Fusion Table.

Click 'Create', select 'More' and click 'Table (beta)'.

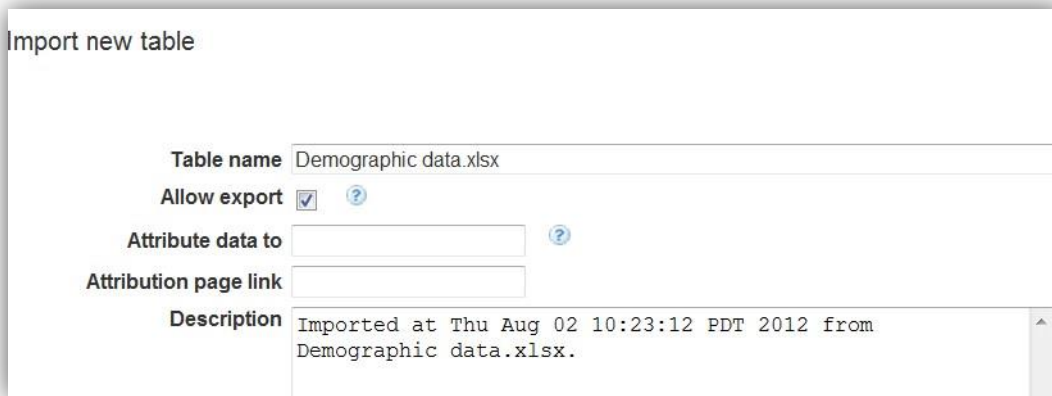


3. Browse to find the table 'Demographic Data.xlsx' containing demographic data from your computer.

In the 'Import new table' pop up window, select 'From this computer' and browse to find the Excel Spreadsheet with demographic data. Click 'Next' when finished.



4. Name the imported table and click 'Finish.'



5. The imported table will look like below.

Demographic data.xlsx Switch to new look Get link Share

File View Edit Visualize Merge Experiment

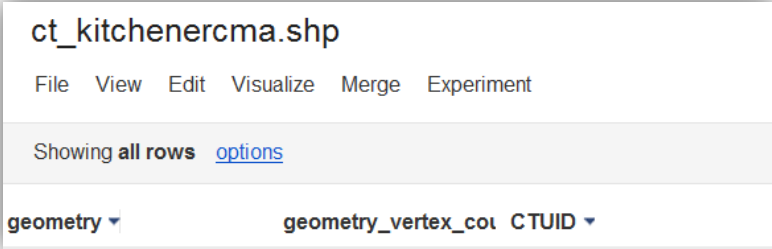
Showing all rows [options](#) 1 - 100 of 102 Next

CTUID	TOTAL	0-14 year	MEDIAN_AGE	
CTUID	TOTAL	0-14 year	MEDIAN_AGE	
5410010.00	5375.0	655.0	39.8	
5410013.00	3355.0	540.0	40.2	
5410123.01	4710.0	750.0	43.9	

Part 3 Merge the demographic data with the KML file

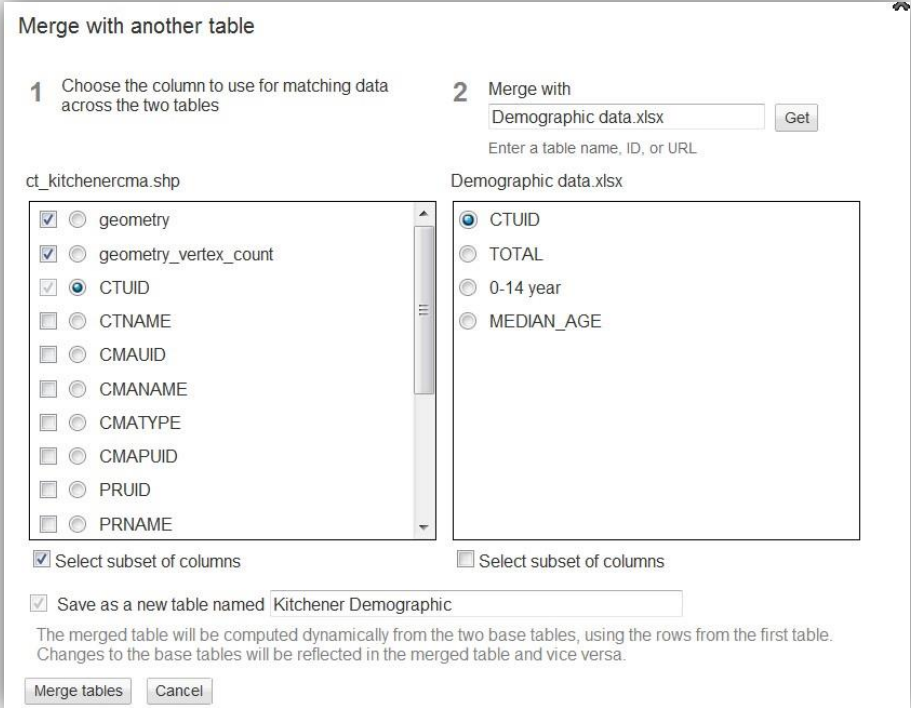
You can merge the demographic table with the KML boundary table by following the steps below:

- 1. Open up the ct_kitchenercam.shp table and click 'Merge' in Google Drive.



- 2. Match the column across the two Fusion Tables.

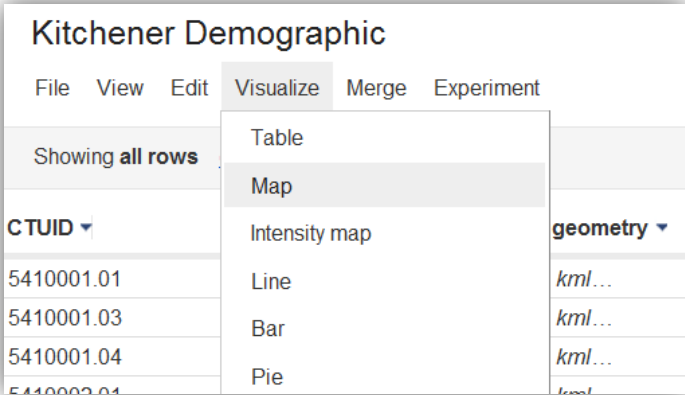
In message window as seen below, under 'Merge with' select the table to merge as the demographic data.xlsx. Next choose CTUID as the matching column for both tables. When finished, you can save the results as a new Fusion Table and give it a name (Kitchener Demographic). Optionally, you may select a subset of columns included in the new table.



Part 4 Visualize the demographic data as a choropleth map

When the table merging process is complete, the next step is to create a choropleth map:

- 1. In the 'Kitchener Demographic' table, click 'Visualize' and then select 'Map'



- 2. Next you will configure map style.

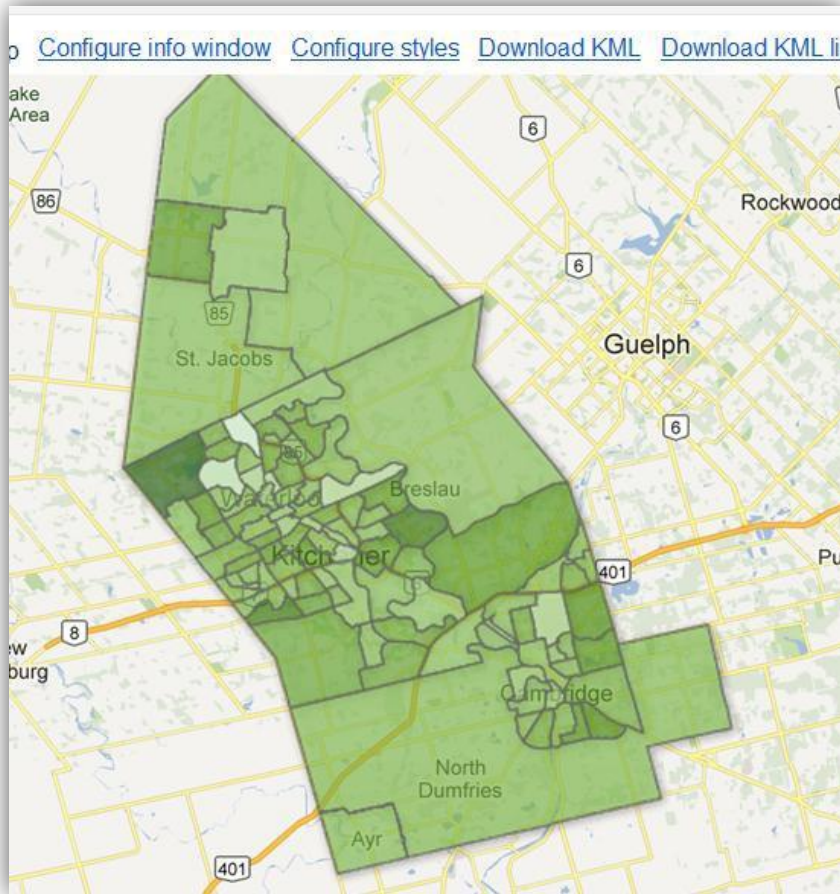
Click 'Configure styles'. This will bring out a 'Change map styles' message window



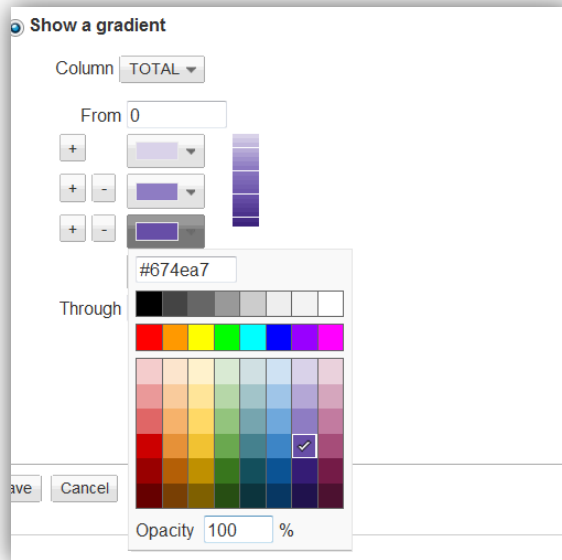
- 2. Set the map styles in the message window.

3. Click 'Fill color' under Polygons side bar and click the 'Gradient' tab. Next you will select 'Column' as 'Total' (Total population). The population value is from 0 to 13000. All will be divided into 4 classes. Click 'Save' when finished.

The choropleth map will look like below.



4. Optionally, you can go back to change the map to a different color style. You just need to change, the number of classes, the color for each class and opacity (100% means Google map background will be invisible). Click 'Save' when finished.



Part 5 Share the map with others

Once the choropleth map is final and you may want to share it with others.

1. Click the 'Share' Button in the top right screen.

This will bring out a Sharing settings message window. The default setting for 'Who has access' is 'Private' but you may wish to change it to 'Public on the web' by clicking 'Change'.

Sharing settings

Link to share (only accessible by collaborators)

<https://www.google.com/fusiontables/DataSource?docid=1ftZySaLfzMlwrgWefC1XQwzLSF>

Share link via:    

Who has access

 Private - Only the people listed below can access [Change...](#)

2. Set visibility options.

You will change visibility options as 'Public on the web' and click 'Save' when finished.

Sharing settings

Visibility options:

-  **Public on the web**
Anyone on the Internet can find and access. No sign-in required.
-  **Anyone with the link**
Anyone who has the link can access. No sign-in required.
-  **Private**
Only people explicitly granted permission can access. Sign-in required.



3. Click 'Done' when you see the 'Who has access' has been changed to 'Public on the web' as below.


Sharing settings

Link to share

<https://www.google.com/fusiontables/DataSource?docid=1ftZySaLfzMlwrgWefC1XQwzLSF>

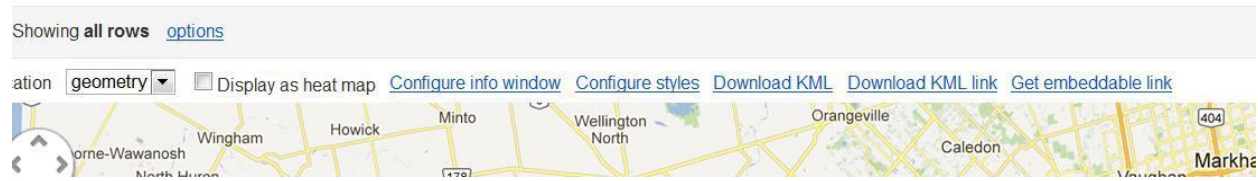
Share link via:    

Who has access

 **Public on the web - Anyone on the Internet can find and view** [Change...](#)

4. Share the map

The link to share under 'Sharing settings' is for sharing the Fusion Table. To share the map, you will need to click 'Get embeddable link' in map view.



5. In the 'Publish' message window, you can copy the link to see in e-mail or paste HTML code to embed the choropleth map in a website.

Edited by Allen Yu

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