Mapping with CartoDB (Malaysia Edition)

In this exercise we are going to use election data to build a simple map of the 2013 election results in Singapore.

In order to complete this exercise you require a CartoDB account. This can be created at http://cartodb.com

This exercise requires two key datasets:

1. The state boundaries in Malaysia
2. The election results in 2013

Both datasets are available from the course website.

Step 1 - Upload data

Once you are logged into cartoDB click the "**Your dashboard**" link in the top right hand corner.

In order to create maps in cartoDB we first need to upload some data. To do this find the "**new table**" link on the right hand side and upload the **state boundaries data file**. This file is a **KML** file containing a set of polygons and names of the various states in Malaysia.

Step 2 - First maps

Once uploaded you will be presented with a tabular view of the data in this KML file. Looking through the table you should be able to find a column that has the **geo** icon displayed next to the column header.

This means that cartoDB has found some data it understands and can represent this on a map. It will also tell you the data type, in this case "**polygon**".

In order to view the map, simply click **map view** at the top of the screen.

We will ignore the colours for now and focus on the boundaries and data being displayed on the map. In order to make navigating easier, let's first add the names of each district to the map.

From the **sidebar** on the right of the screen, click the **wizards** icon.

This will bring in a side panel from which you can edit the display properties of the map. Keep the display in **simple** mode and change the **Label Text** to display the name of the district on the map.

You may choose to edit the font style and position of the text as you see appropriate.

Step 4 - Election data and merging

With the election boundaries mapped we now need to upload the voting data. This has been prepared and is available via the course website.

In order to upload the data, first navigate back to your dashboard by clicking the **back** link next to the table/map title in the top left of the screen.

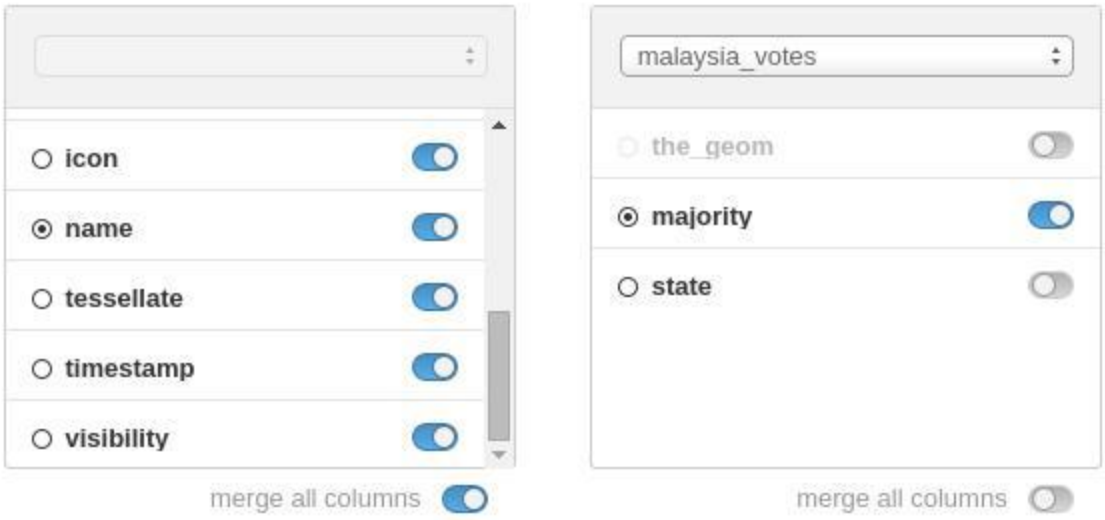
From the dashboard, follow the instructions in **step 1** to upload the election votes data. Once uploaded, feel free to take a look at the contents of the file. You will notice that the file has no geometry data and only contains data pertaining to the parties that won the election in each state.

In order to merge this data with our boundaries dataset this is best done from the **boundaries table**. To return to your boundaries table **press the back button** again to return to your dashboard and then select the boundaries table. Ensure that you are in **data view.**

In order to merge the two tables, select the **merge tables** option from the sidebar (ensuring you are in **data view**).

From the next screen select **Column Join**. Note that cartoDB can do a spatial join, which is really useful for counting points inside polygons.

From the next screen ensure that you **merge all columns** from both tables and **select the bullet point next to name in both columns** (as shown below).



Once done click **merge tables**. This will create you a new table.

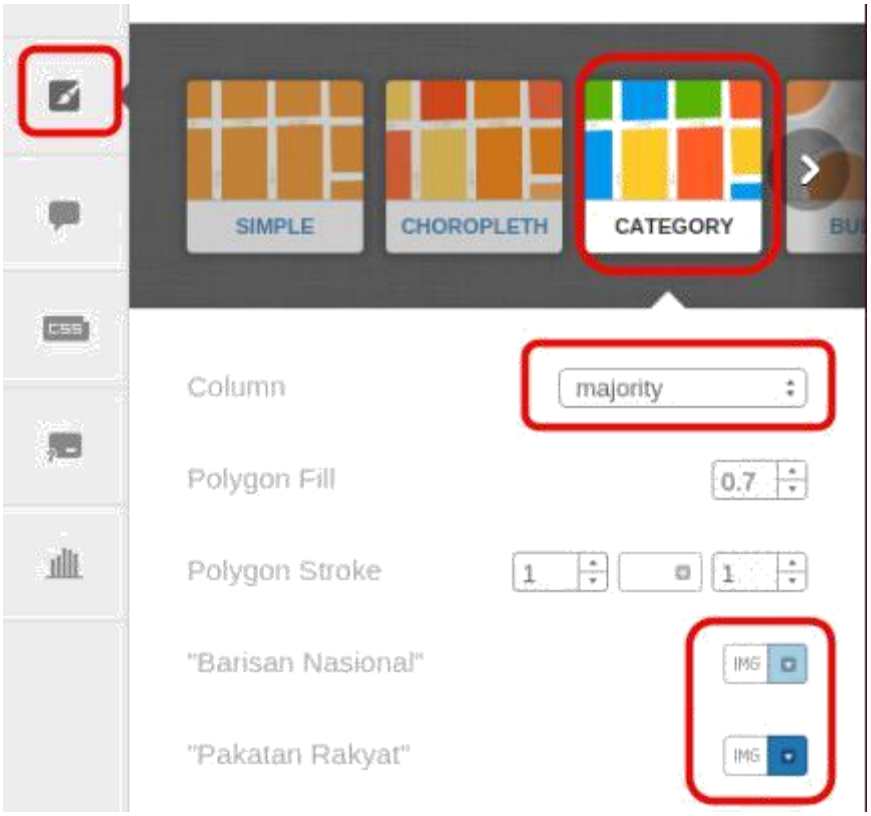
Step 5 - Finishing up

From the **map view** of your new table you will notice that the customisation we did in step 2 has been lost. Repeat step 2 to add this back in.

```
#singaporeelectoralboundaries2011_merge::labels {
  text-name: [name];
  text-face-name: 'DejaVu Sans Book';
  text-size: 10;
  text-label-position-tolerance: 10;
  text-fill: #000;
  text-halo-fill: #FFF;
  text-halo-radius: 1;
  text-dy: -10;
  text-allow-overlap: true;
  text-placement: point;
  text-placement-type: simple;
}
```

Unfortunately, the next step will remove these labels again, however we can make a backup of the code in order to easily add it back later. To do this click the **css** icon in the sidebar and then copy and paste the text that adds the labels (shown on the left) to a new text document somewhere outside of CartoDB (e.g. notepad or wordpad).

Once you have this text copied, select the **wizards icon** from the sidebar and this time select **category** from the options. This time select the **column** name **party** and you will see that the map will update to show the two parties that won different districts during the 2013 election.



For completeness, you could also add the proper party colours in the section at the bottom of the screen. “Barisan Nasional” is colour code “**#000080**” and “Pakatan Rakyat” is “**#f8991c**” according to wikipedia (search State Election Results 2013)

Finally copy and paste your district names css back into the css panel and click **Apply style** to update the map.

Note: You can embed and share your map directly from CartoDB, making it easy to include on other websites. To do this you will need to create a visualisation (button top right) and then click the share icon (shown right) in the map.

Extension exercise - Spatial join

Why not try and find a dataset that has lots of location data in it and see how you can use cartoDB to plot this data. If you have statistical point data, why not try a spatial join.

There are lots of guides to using CartoDB available from
http://docs.cartodb.com/tutorials.html

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