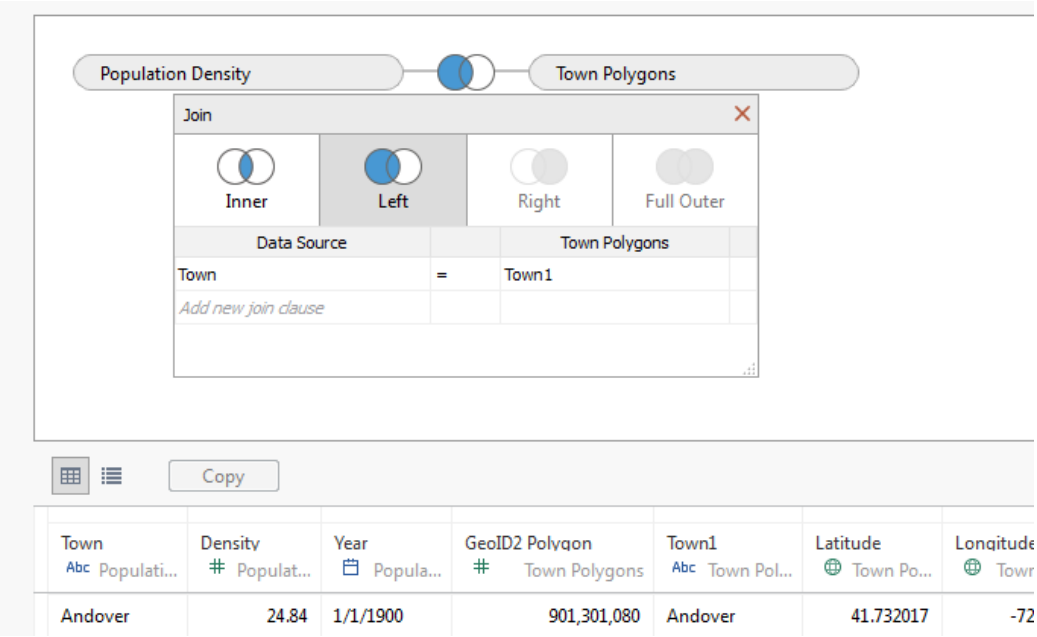
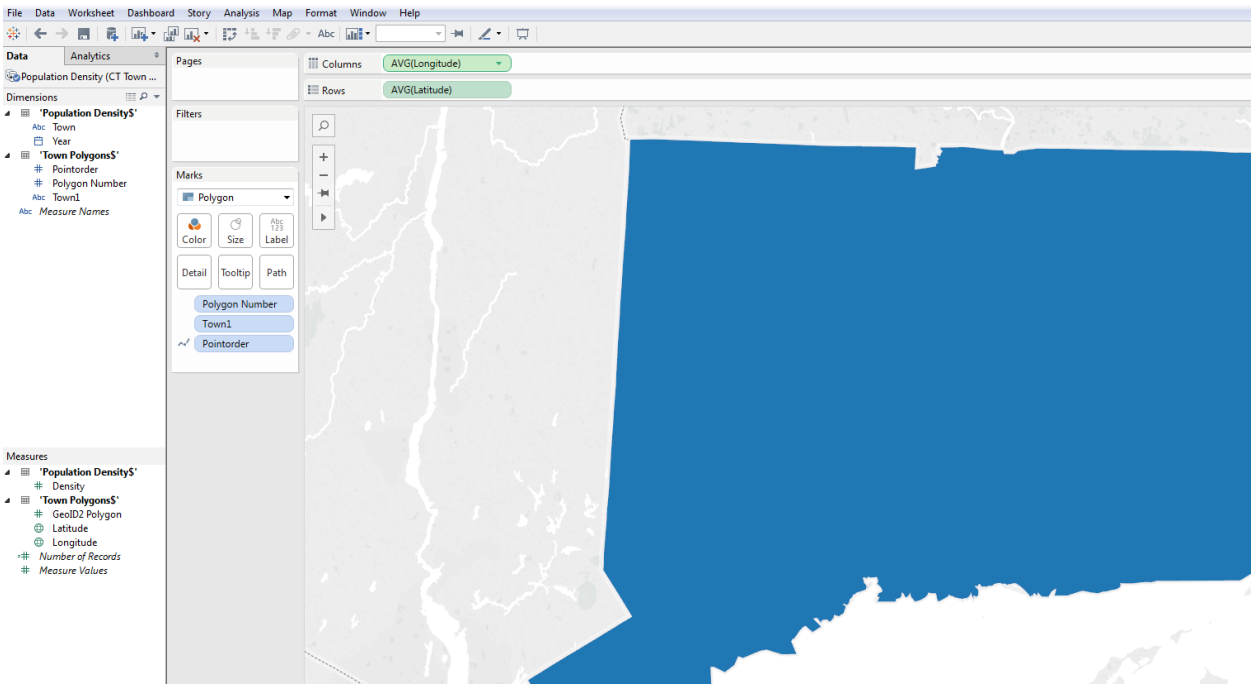
Open Tableau Public and connect to Excel workbook CT Town Density Tableau.xlsx .

1. Drag Population Density sheet into data space
2. Go to Sheet 1
3. From the Data menu, go to the submenu under the data sheet name (Population density), and select **Edit Data Source**
4. Drag **Town Polygons** into the data space. Adjust the join, making it a **Left** join on **Town** fields:

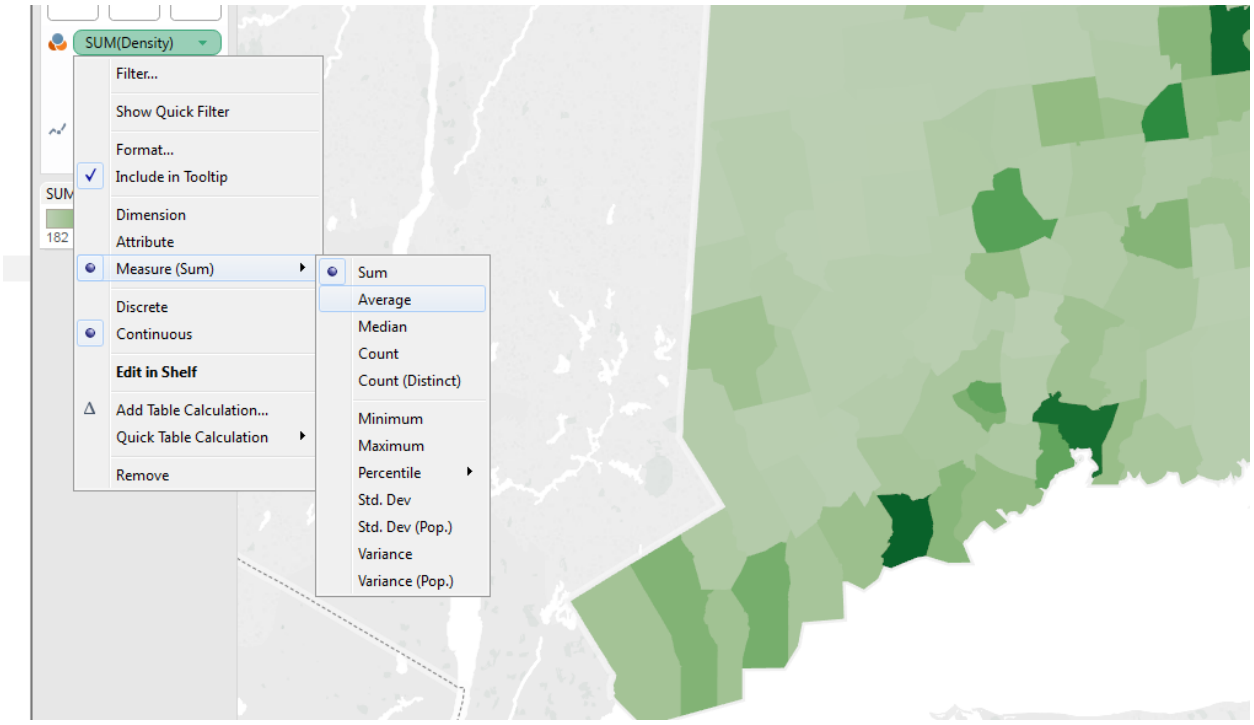


5. Now go back to Sheet 1 and:
    - Drag Latitude to Rows
    - Drag Longitude to Columns (note: for these to work correctly, the aggregation for both these has to be AVG (average) as in the image below.
    - Change the graph type to **Polygon** in Marks card
    - Drag **Point Order** up into the Dimensions window.
    - Then, drag Point Order onto **Path** in Marks card
    - Drag Polygon Number onto Detail in Marks card
    - Drag Town from Dimensions onto Detail in Marks card.

    You should now have this:



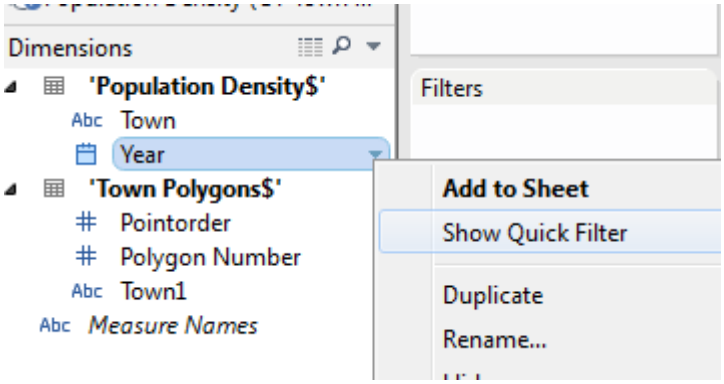
6. Now you're ready to place data on the map. You can drag the **Density** measure to **Color** on the Marks card.
7. Now you have to adjust the aggregation of the Density measure because by default its SUM, and it must be changed to **AVG** from the Density pill carrot menu in the Marks card:



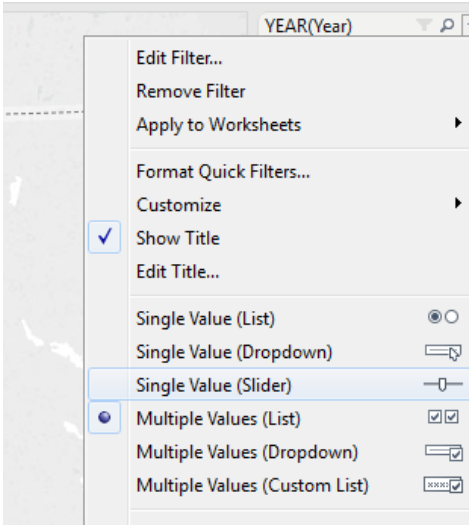
Note the density legend will now reflect a more reasonable scale (it's still an aggregation of all years, but we'll address that in a minute).

What's happening is that Tableau is by default creating a sum of each town's pop density for all years ***for every point of its (the town's) polygon***. This will happen whenever you're using custom polygon maps in Tableau. It really isn't a bug in the software, it's just that Sum is the default aggregation here, and the way the data is joined to the polygon file it's automatically going to add together the values for each point in the polygon for each town, which is why we get some crazy numbers at first. Changing the aggregation to Average fixes this.

8. Now we also have to address a similar issue with the Year dimension. Because you have multiple years in the data, the Density now displays an average for *all years*, so we'll need to filter on the Year dimension. You could drag Year to Filter and chose a specific year to display. But you can also incorporate a slider to allow the user to view one year at a time:
    a. Choose 'Show Quick Filter' from the menu for the Year dimension:



    b. That will put a list of all years with check boxes next to your map. You need to limit your user to one year at a time; so adjust the quick filter from the menu:



And choose one of the 'Single Value' options. 'Single Value (Slider)' will put a year slider next to the map.

(You can adjust the Titles of the legend and slider to remove 'Avg' from the carrot menus.)