Creating the Density Dashboard

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Task 1: Data Dashboard and Storytelling

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Creating the Density Dashboard

1. The density dashboard will look like this when completed:

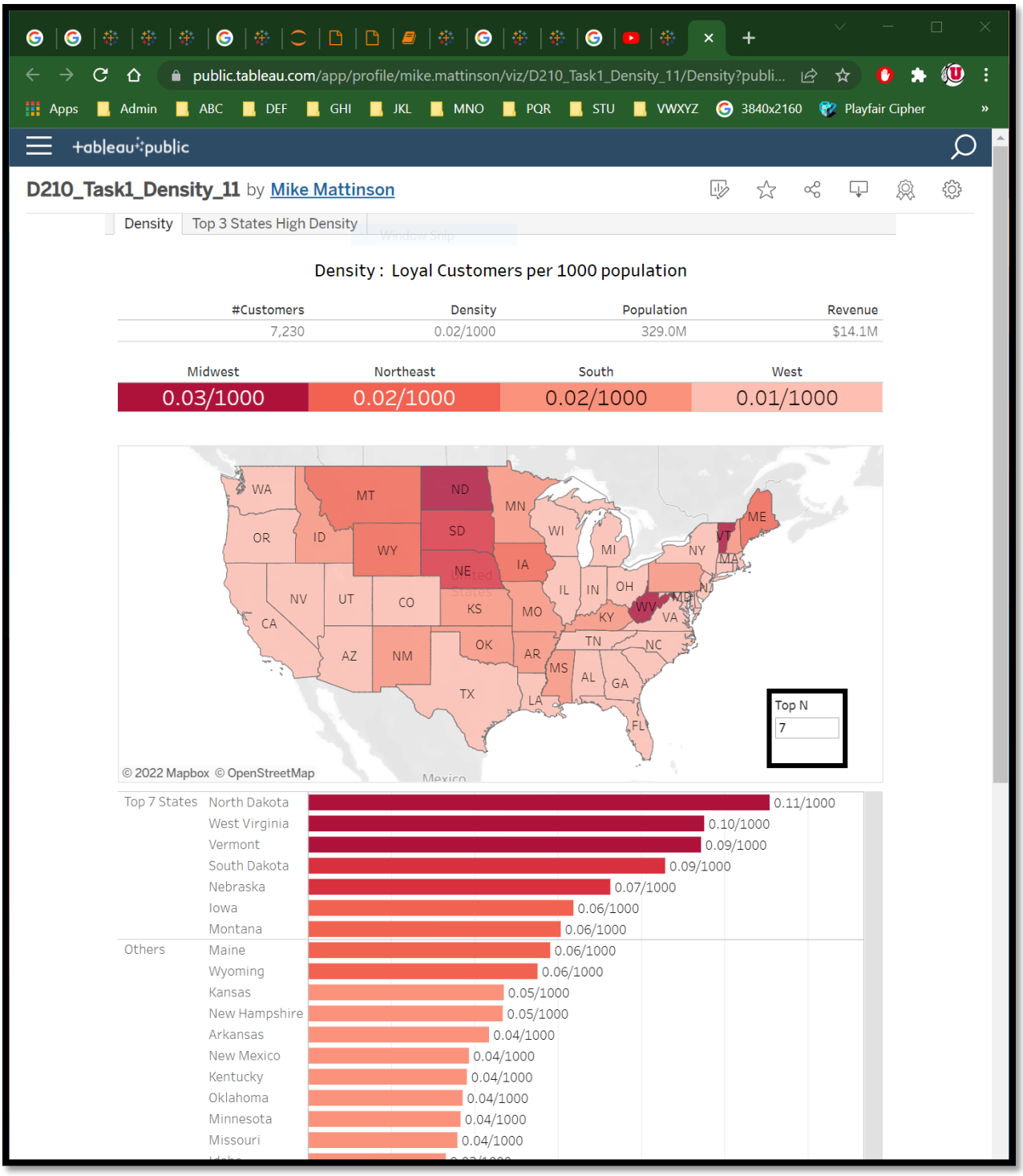


Figure 1 Final Dashboard

THE DASHBOARD IS MADE UP OF FOUR (4) SHEETS AND ONE (1) PARAMETER

Create New Data Source

Ensure that the three (3) data files mentioned above are saved to the local storage.

2. Open Tableau, then select **Data > New Data Connection**.

3. Add "**Churn.csv**" data

4. Add "**States.csv**" data

For the second text file, the "**states.csv**" text file, select the file from the left pane and drag it over to the right side of churn_clean.csv. There will be a line connecting the two data files. Click on the line connecting the two data files and then update the relationship by selecting **State** under churn_clean.csv file and then selecting **Code** under the states.csv file.

Alternatively, double click on the Churn data then add the States table and join the two data tables into a single joined table called a set or union.

5. Add "**Population.csv**" data

For the third text file, the "**population.csv**" text file, select it on the left pane and drag it over to the right side of states.csv. Click on the line connecting states and population, then update the relationships by selecting **State** under states.csv and **Name** under population.csv.

6. Create table relationships

7. Add Data Filters

8. Here is what the data connections look like:

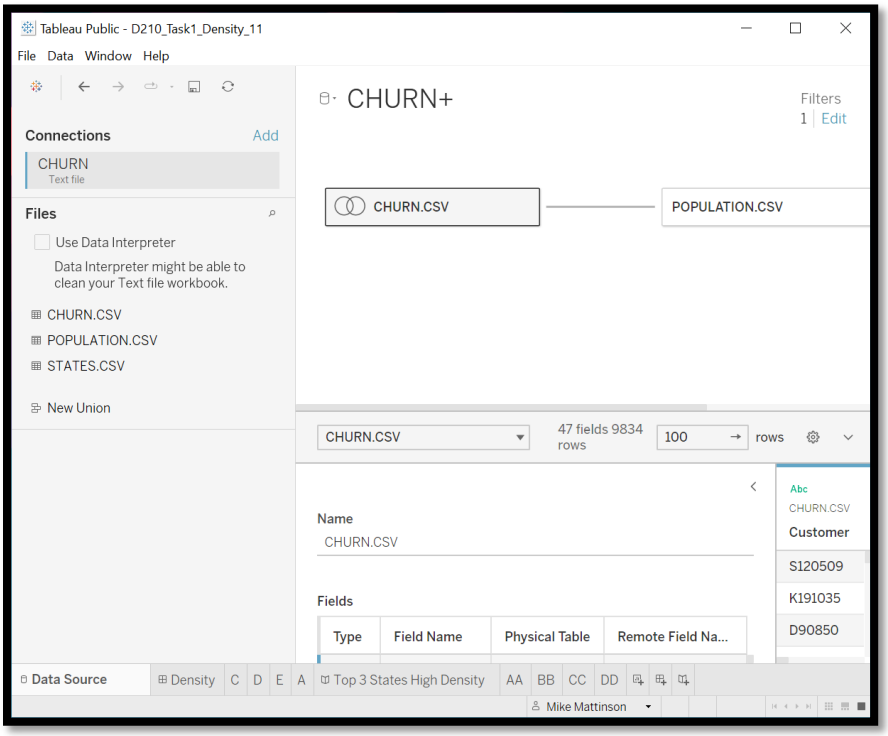


Figure 2 Data Connections

THE THREE (3) DATA SOURCES DEFINED AND CONNECTED TO EACH OTHER ARE SHOW IN THE TOP RIGHT. ON THE LEFT SIDE, ALL OF THE AVAILABLE FILES ASSOCIATED WITH THIS CONNECTION. IN THE BOTTOM RIGHT PANE, THE DATA DETAILS ARE DISPLAYED FOR WHICHEVER TABLE IS SELECTED ABOVE, IN THIS CASE, THE CHURN_CLEAN IS SELECTED. ALSO, IN THE VERY BOTTOM, IF YOU NEED TO COME BACK TO THIS AREA, YOU CAN SELECT “DATA SOURCE” TAB. IF YOU HAVE CREATED A TABLEAU USER ACCOUNT, YOUR USER NAME IS DISPLAYED.

Cleaning the Data

9. Remove fields from Churn data

Most of the cleaning has already happened externally using a combination of Excel or Python/Jupyter. But, it may help to simplify the Tableau work if some of the remaining fields are removed. Optionally, the following fields can be effectively removed by selecting the column and choosing **Hide**:

- CaseOrder
- UID
- County
- Interaction
- City
- Job
- Zip
- Population
- Lat
- Lng

10. Remove fields from States data

Remove the following fields from the States data, by selecting the column and choosing **Hide**:

- Abbrev

11. Remove fields from Population data

Remove the following fields, by selecting the column and choosing **Hide**:

- GEO_ID
- POP_BASE2020
- POP_2020

12. Before creating the sheets and dashboards, go through each fields and define the default colors and formatting, this will aid in creating consistently looking sheets and dashboards.

Create Sheet Named "A" – Key Measures

13. This will be the key measures table, it should look like this when done:

#Customers	Density	Population	Revenue
7,230	0.02/1000	329.0M	$14.1M

14. Create new sheet named "**A**"

15. Create Calculated Field Named "**Density**" and update its default settings:

    Name: Density

    Calculation: count([Customer])/sum([Population])*1000

    Color: Red 5 steps

    Number Format: Number (Custom), 2 decimal places, suffix "/1000"

16. Drag "**Churn**" to filter, select "No", want to include only loyal customers.

17. Create Measures Names/Measures Values, click on Customer (Count), Revenue, Population and Density in the data pane on the left, then drag all four (4) measures highlighted green, to main area on the right side, then move the "**Measure Names**" from Rows to Columns. This drag and drop action will create a new "**Measures Names**" dimension which can be edited to add/remove other fields if needed, like this:

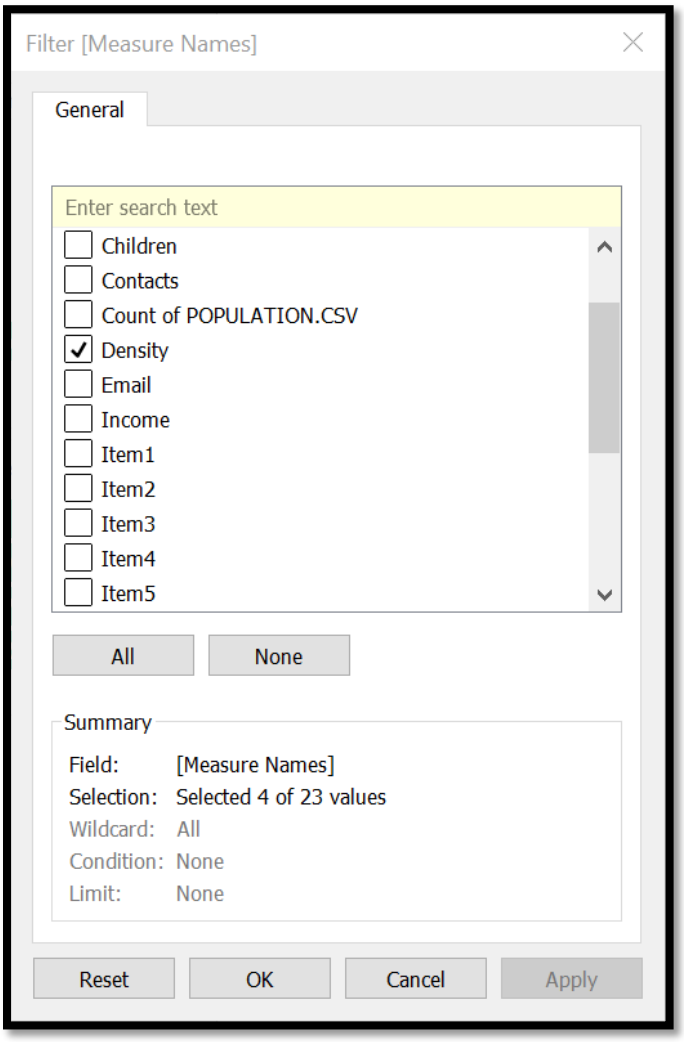


Figure 3 Edit Measures Names (Optional)

18. Fit to "**Fit Width**"

19. Hide sheet title

20. Hide column labels

21. Here is what the final sheet looks like:

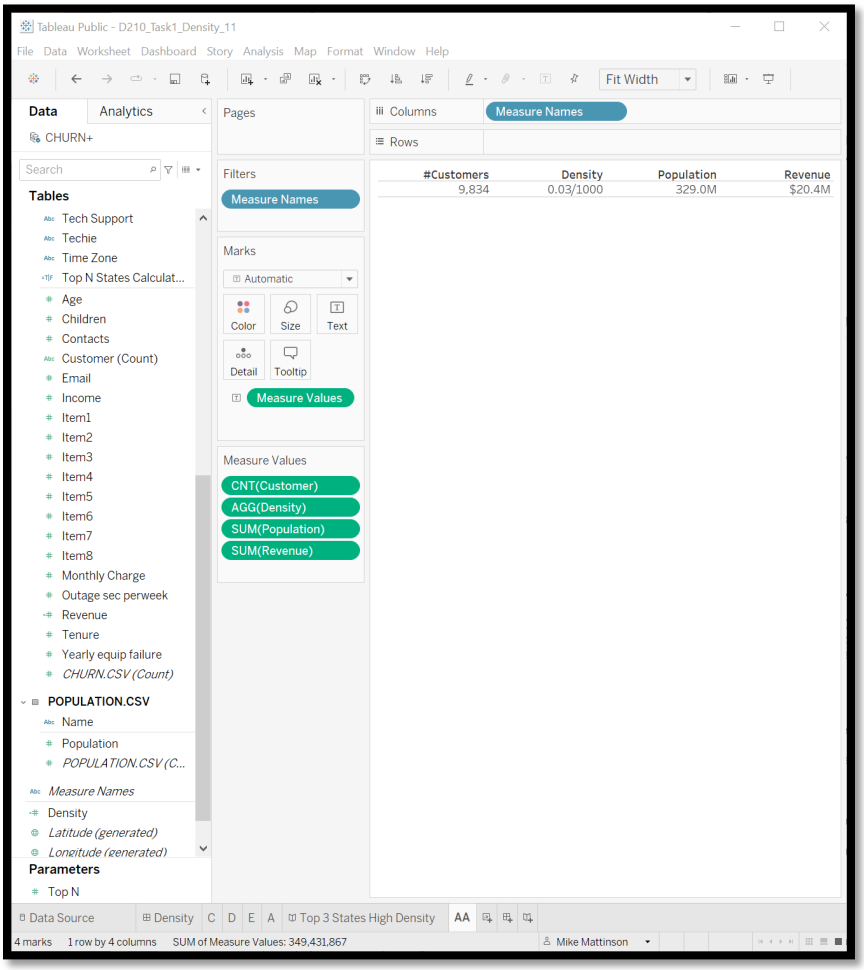


Figure 4 Final Sheet of Key Measures

Create Sheet Named "B" - Density Values Grouped by Region

22. This will be the next part of the dashboard, the breakdown of density values grouped by Region. It should look like this when finished:

23. Move "**Region**" to the Columns shelf.

24. Drag "**Region**" to Label

25. Drag "**Region**" to Color

26. Drag "**Churn**" to filter, select "No", want to include only loyal customers.

27. Fit to "**Fit Width**"

28. Remove sheet title

29. Hide Field Labels for Columns

30. Hide Agg(Density) legend card

31. And this is what the Tableau sheet looks like:

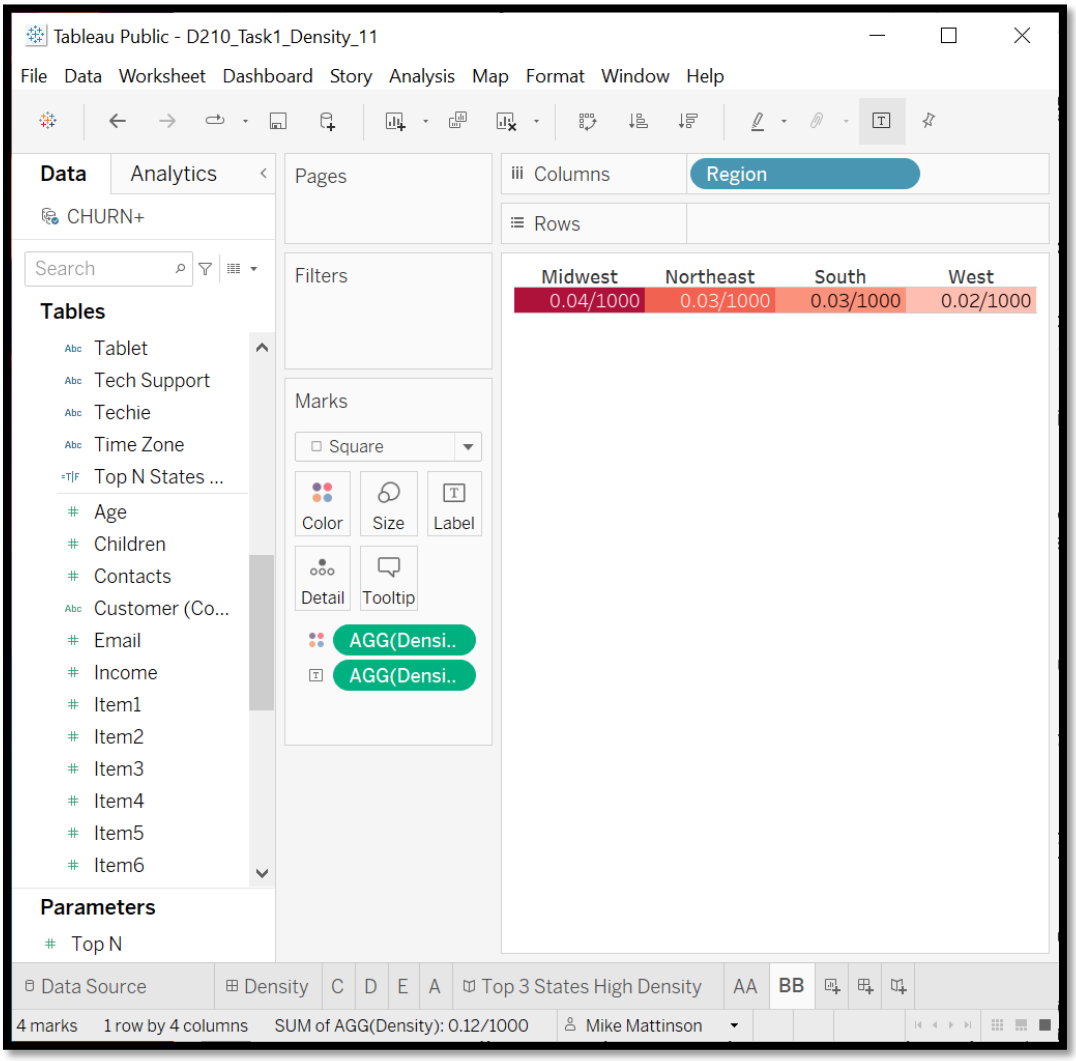
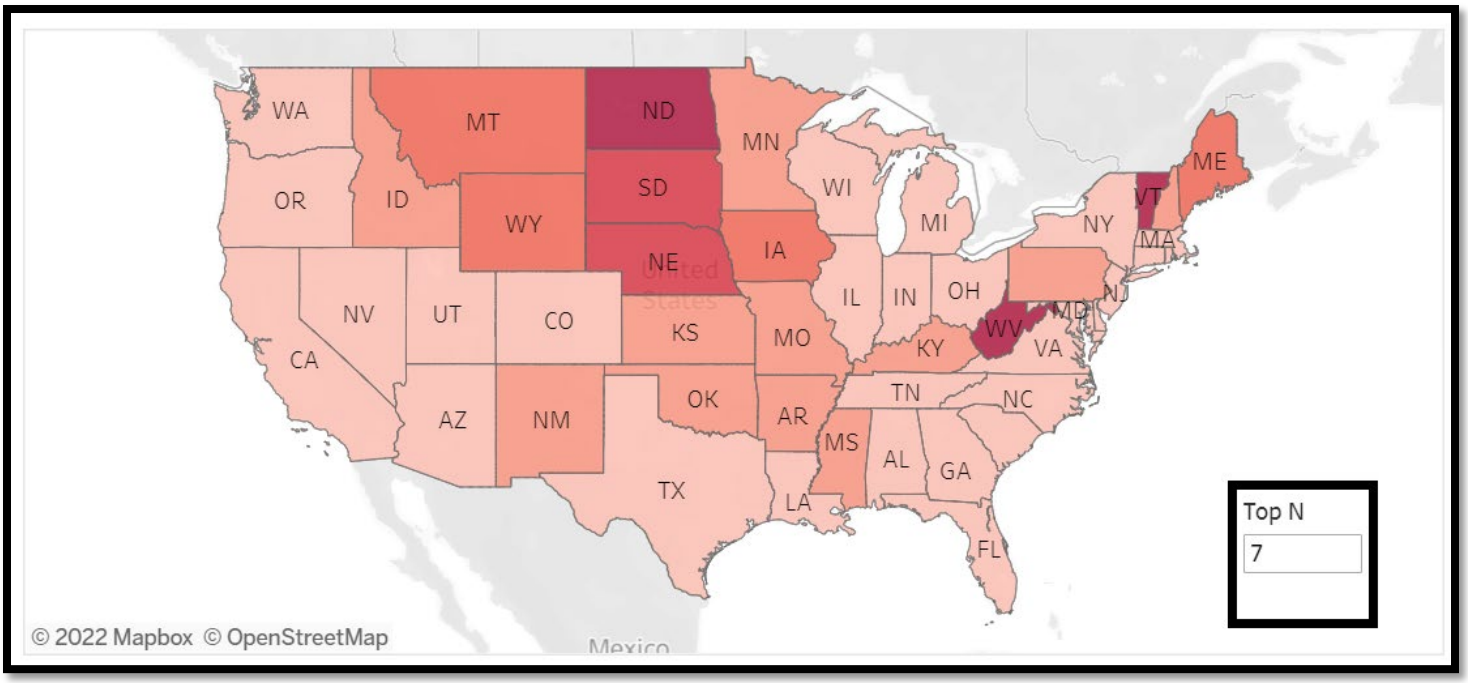


Figure 5 Final Sheet for Region Totals

Create sheet named "C" - Map

32. Here is what the map sheet should look like:



33. Create new sheet named "**C**"

34. Drag "**State**" from data pane to main area on right.

35. Change mark type to **Map**.

36. Drag "**Density**" to Color.

37. Hide **AGG(Density)** legend card.

38. Drag "**Churn**" to Filters, select "No" only, this visualization will show data for loyal customers only.

39. Drag "**State**" to Label, two letter state codes are added to map.

40. Add "**Customer**", "**Density**" and "**Population**" to Tooltip

41. The final map sheet should look like this:

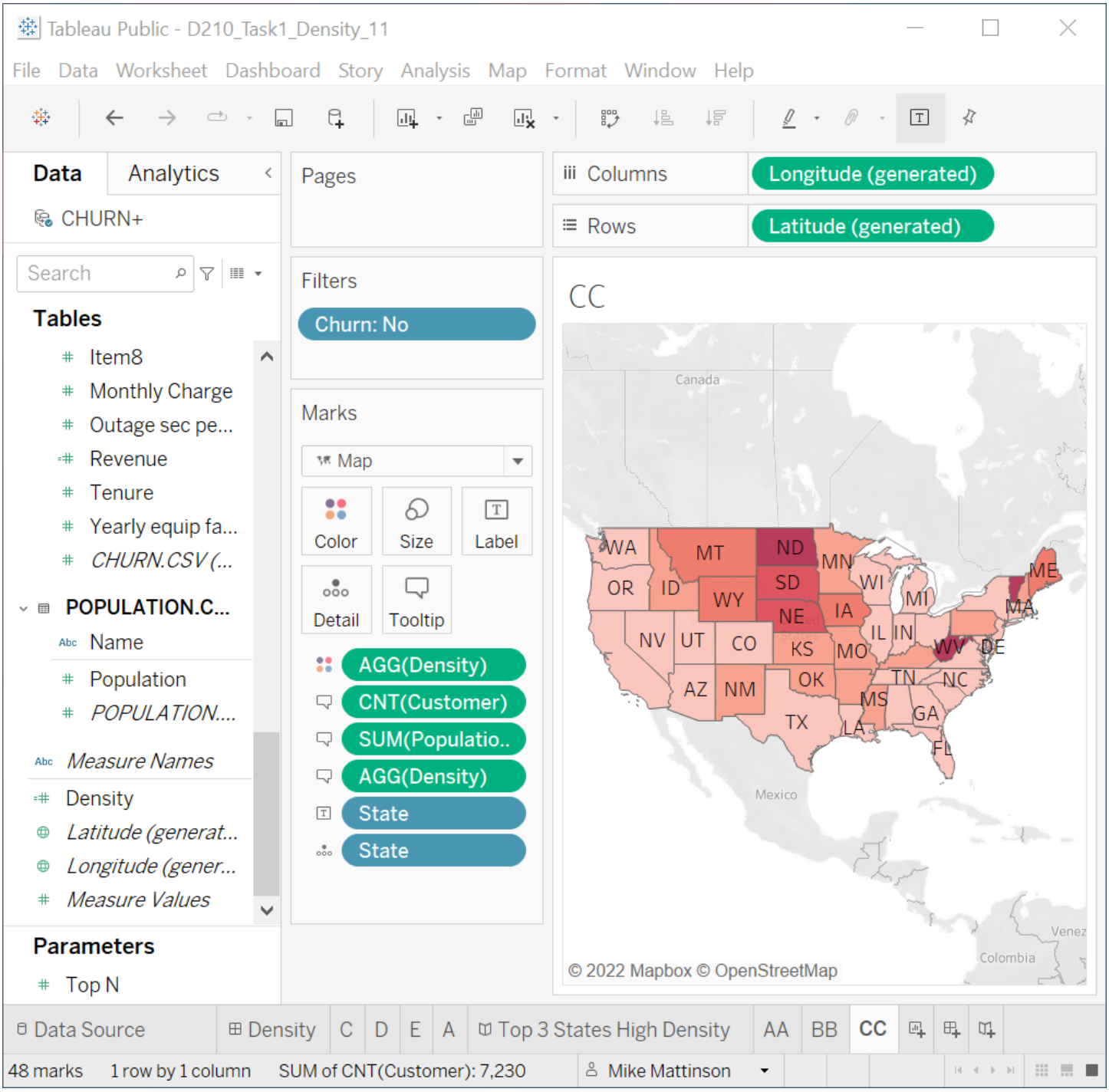


Figure 6 Final Map Sheet

Create sheet named "D" – Top N States Table

42. The last section of the dashboard should look like this:

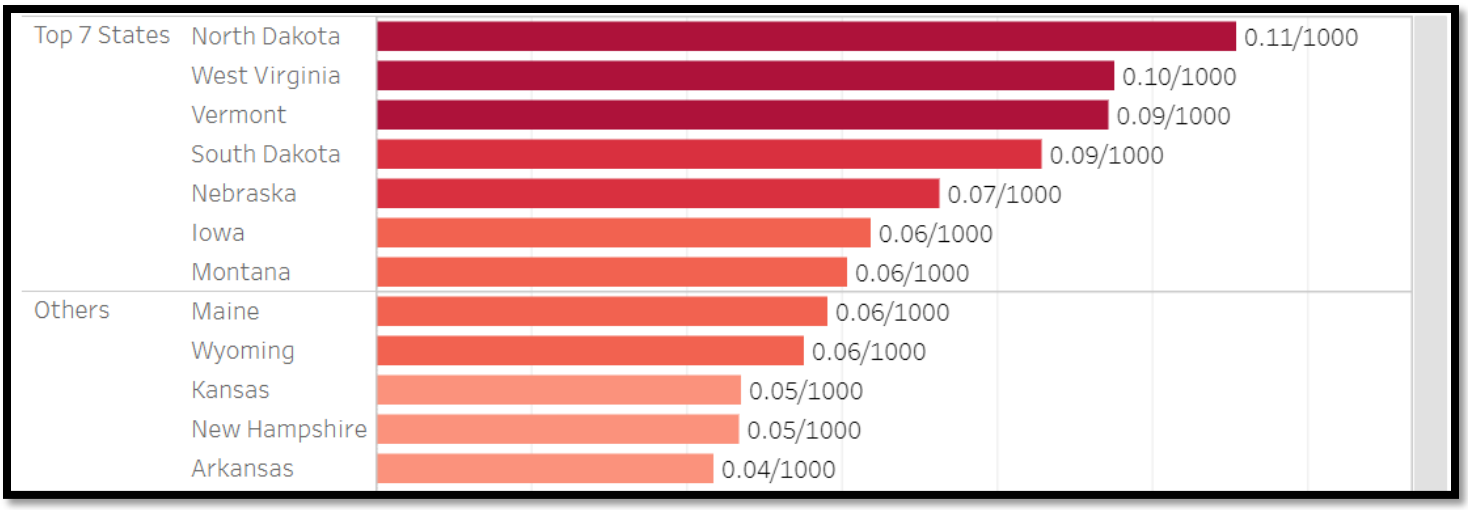


Figure 7 Top X States Table

43. Create new sheet named "**D**"

44. Create new parameter named "**Top N**"

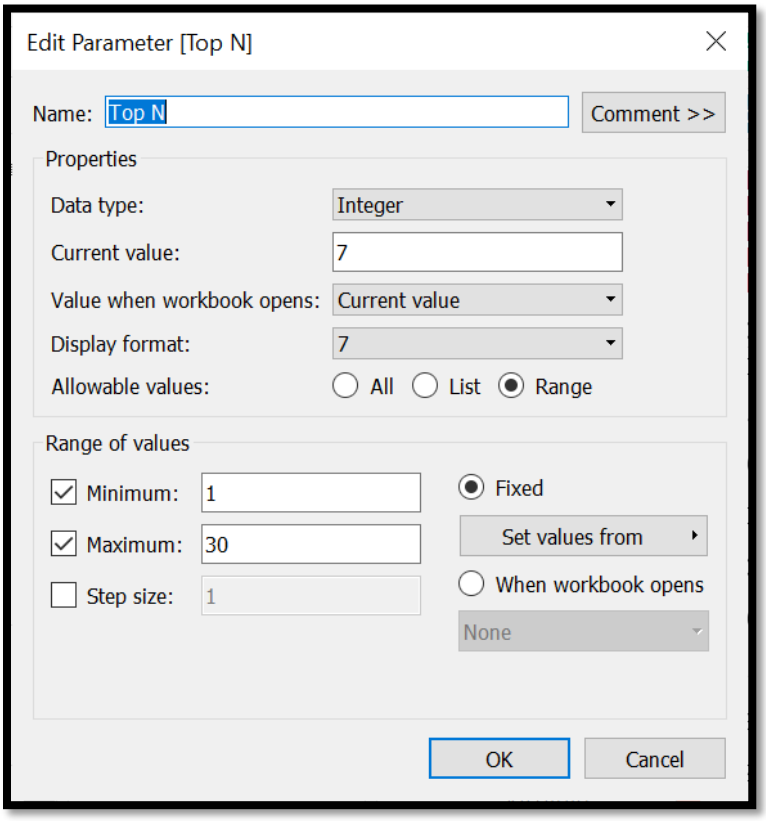


Figure 8 Top N parameter

Name: Top N

Data Type: Integer

Allowable values: Range

Range Min: 1

Range Max: 30, not all of the states, some number 20-30 for breaking up the list of states.

45. Right Click on "**Top N**" parameter, then select "Show Parameter"

46. Create set named "**State Set**"

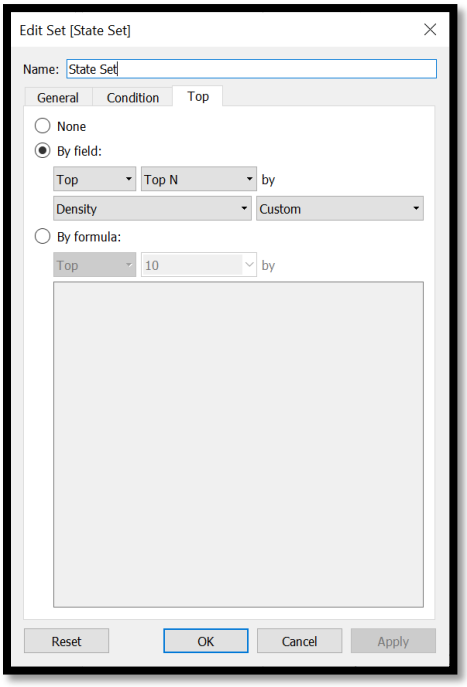


Figure 9 State Set

47. Create calculated field named "**Top N States Calculated**"

```
[State Set]
```

48. Create calculated field named "**Subset Density**"

```
IF [Top N States Calculated]
THEN "Top " + str([Top N]) + " States"
ELSE "Others"
END
```

49. Drag "**Subset Density**" to Rows inbetween IN/OUT(State Set) and State

50. Right click IN/OUT(State Set), **uncheck “Show Header”**

51. Hide **AGG(Density)** card.

52. Hide sheet title

53. Hide field labels for Rows

54. Everything is done, this is what the final sheet looks like:

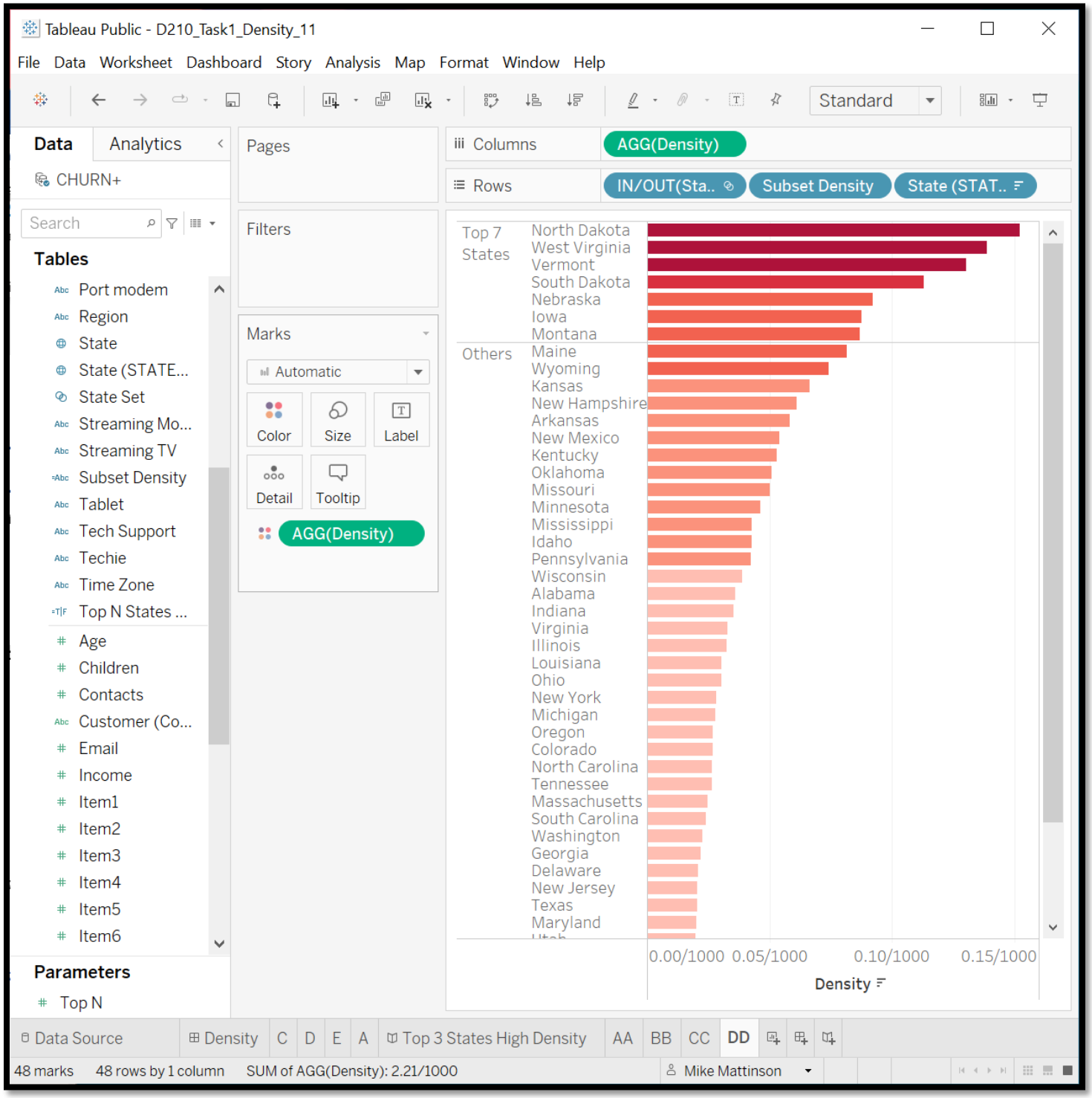


Figure 10 Final Density Table Top N States

Create new dashboard named “Density”

55. Create new dashboard named “Density”

56. Set custom size to 750x1400

57. From the top, drag sheet “A” to dashboard

58. Drag sheet “B” to dashboard

59. Drag sheet “C” to dashboard

60. Drag sheet “D” to dashboard

61. Show dashboard title

62. Modify dashboard title to read:
    `<Sheet Name> : Loyal Customers per 1000 population`

Publish to Tableau Public

63. Save to Public Tableau As…