

DATA SOCIETY:

Introduction to Tableau

Part 2

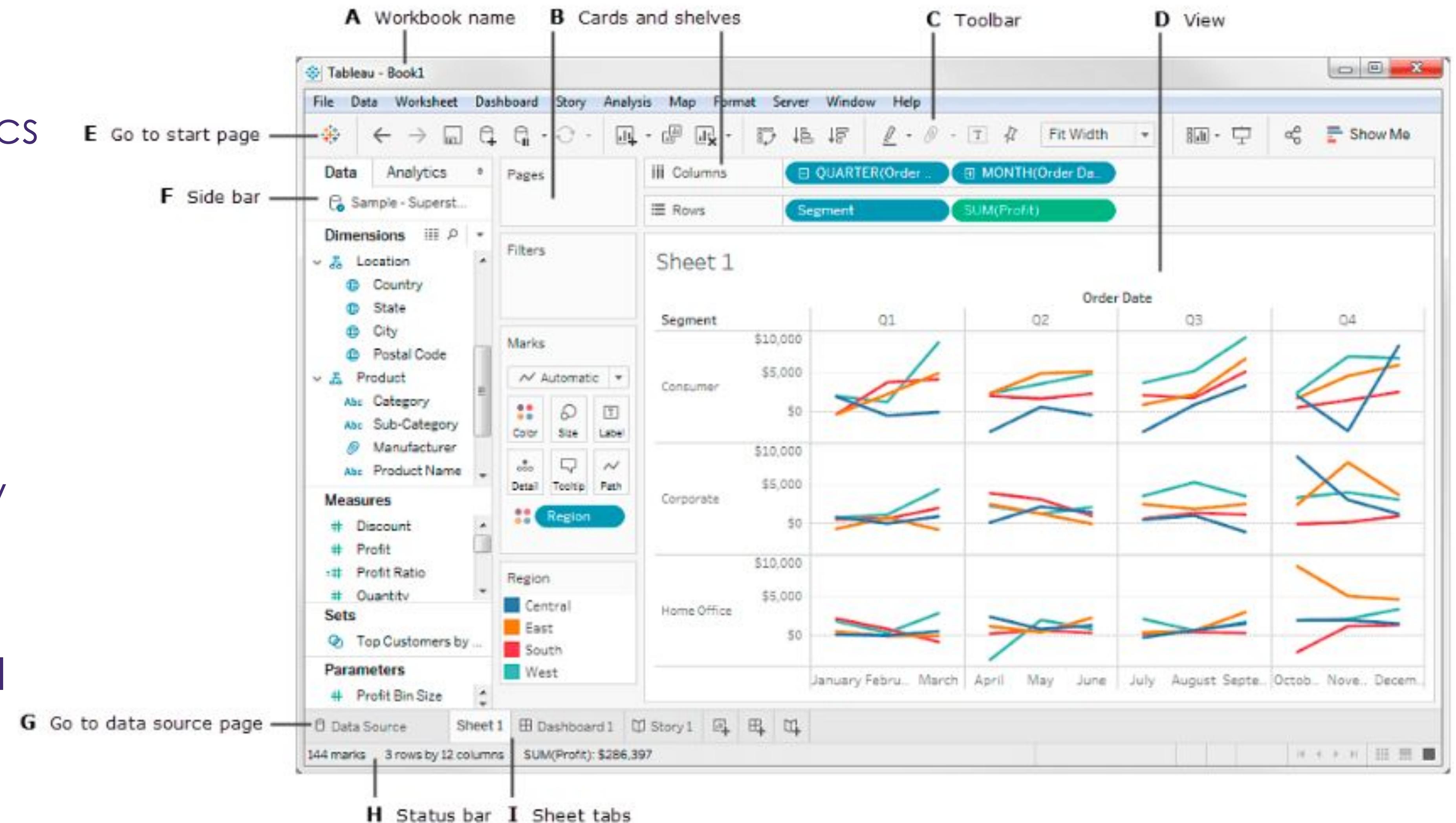


Module completion checklist

Objective	Complete
Explore the Tableau platform layout	
Create basic visuals using the World Data	

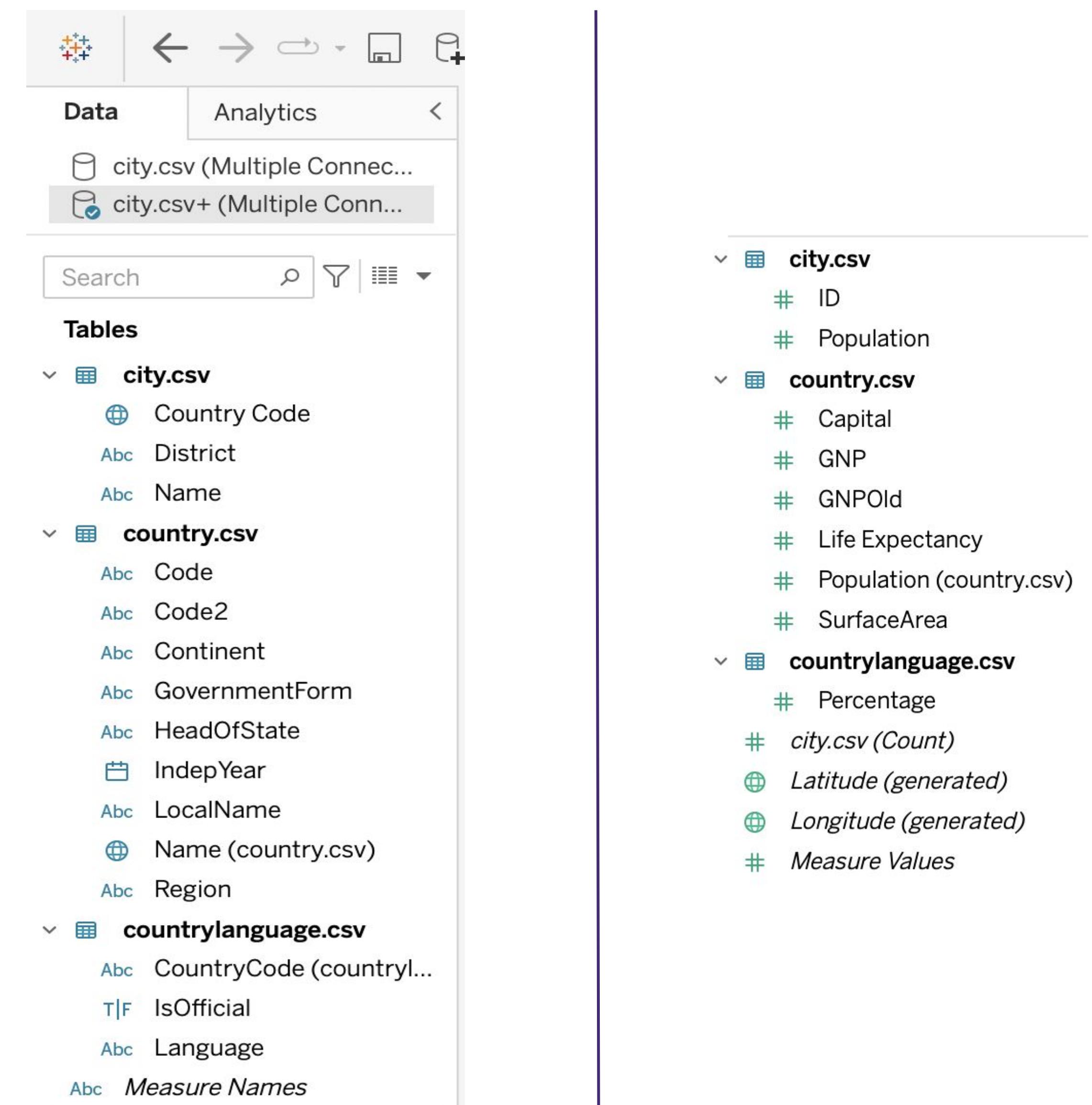
Overview: key parts of Tableau UI

- Start button
- Data and analytics views
- Sheets view
- Marks panel
- Story tab
- Dashboard tab
- Columns and row shelves
- Variable “pills”
- “Show Me” panel



Data tab

- The **data tab** shows several key pieces of information:
 - Dimensions and Measures variables
 - Loaded databases
 - Sets
 - Parameters
- Note that the type of variable is noted to the left of the variable name in the form of an **icon**.

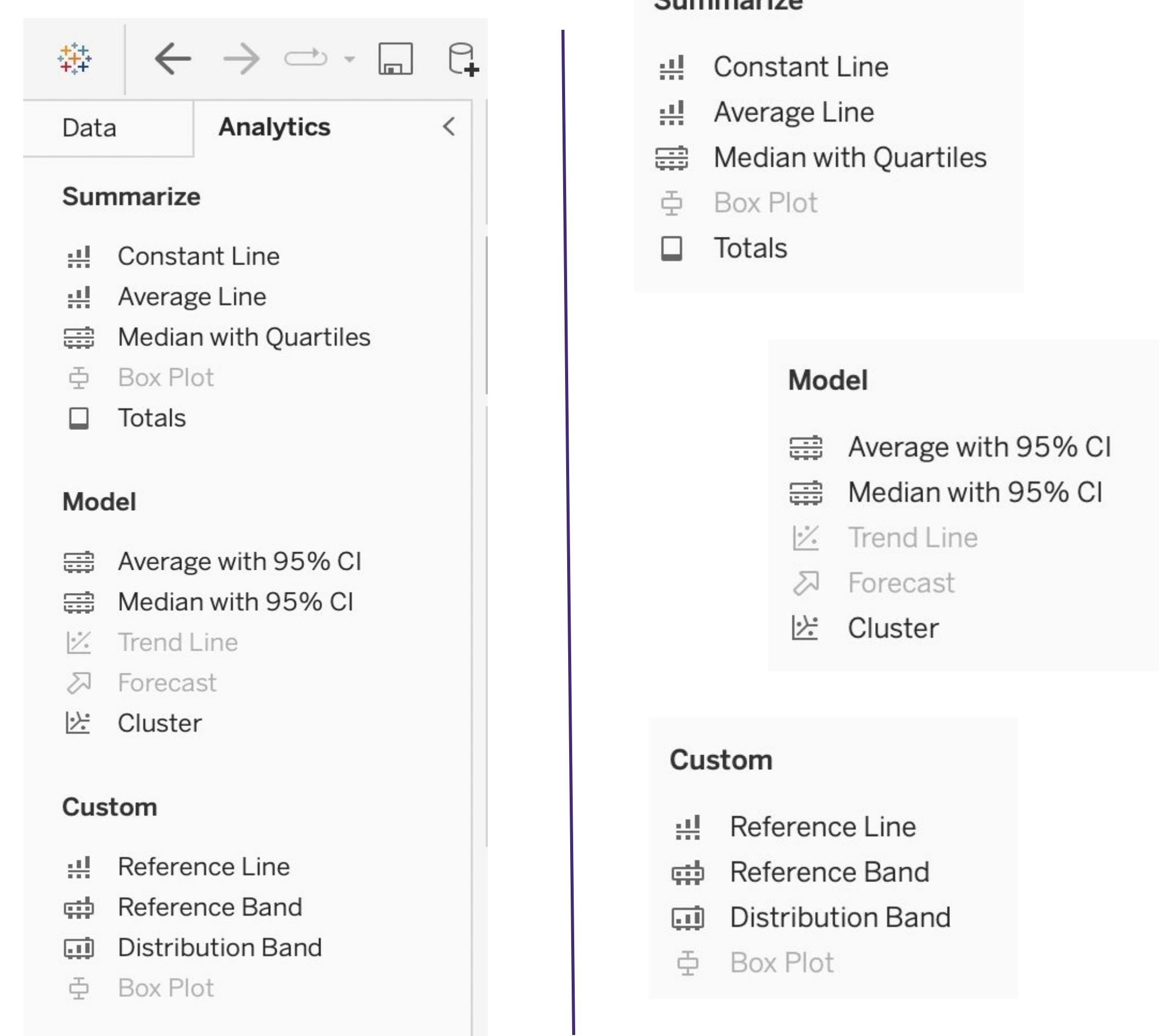


The screenshot shows the Tableau Data tab interface. At the top, there are tabs for "Data" and "Analytics". Below the tabs, a search bar and a filter icon are present. The main area is titled "Tables" and lists three loaded CSV files: "city.csv", "country.csv", and "countrylanguage.csv". Each table is expanded to show its dimensions and measures. To the right of the tables, a legend provides a key for the variable types shown in the icons.

- city.csv
 - ID: Country Code
 - ID: Population
- country.csv
 - Capital: Country Code
 - GNP: Code2
 - GNPOld: Continent
 - Life Expectancy: GovernmentForm
 - Population (country.csv): HeadOfState
 - SurfaceArea: IndepYear
 - SurfaceArea: LocalName
 - SurfaceArea: Name (country.csv)
 - SurfaceArea: Region
- countrylanguage.csv
 - Percentage: CountryCode (countrylanguage.csv)
 - Measure Values: IsOfficial
 - Measure Values: Language

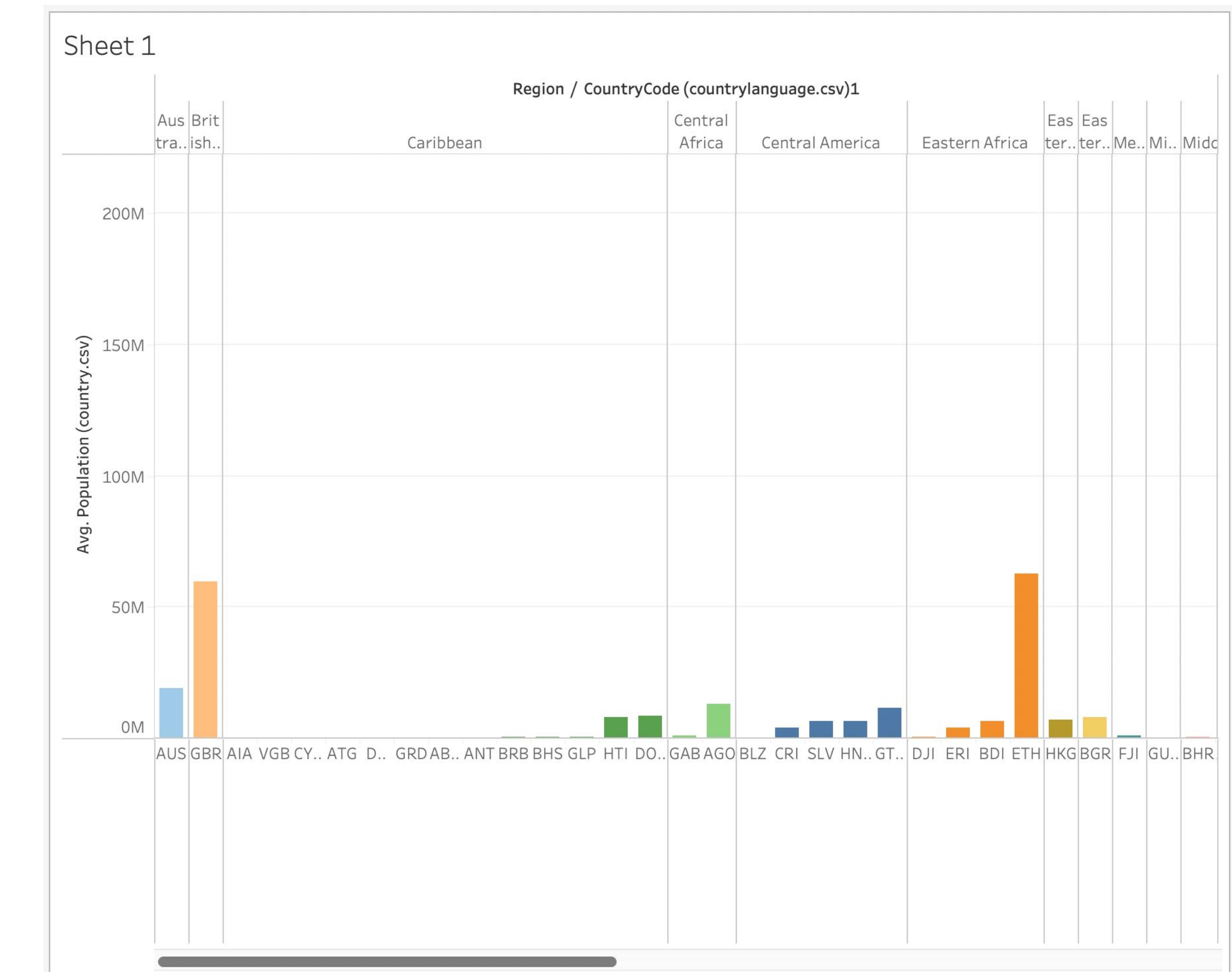
Analytics tab

- The **analytics tab** is divided into 3 groups based on functionality:
 - Summarize
 - Model
 - Custom
- It is used to apply advanced analytics to the view and provides drag-and-drop functionality for various options.
- You can add box plots, reference lines, and other elements to your view.



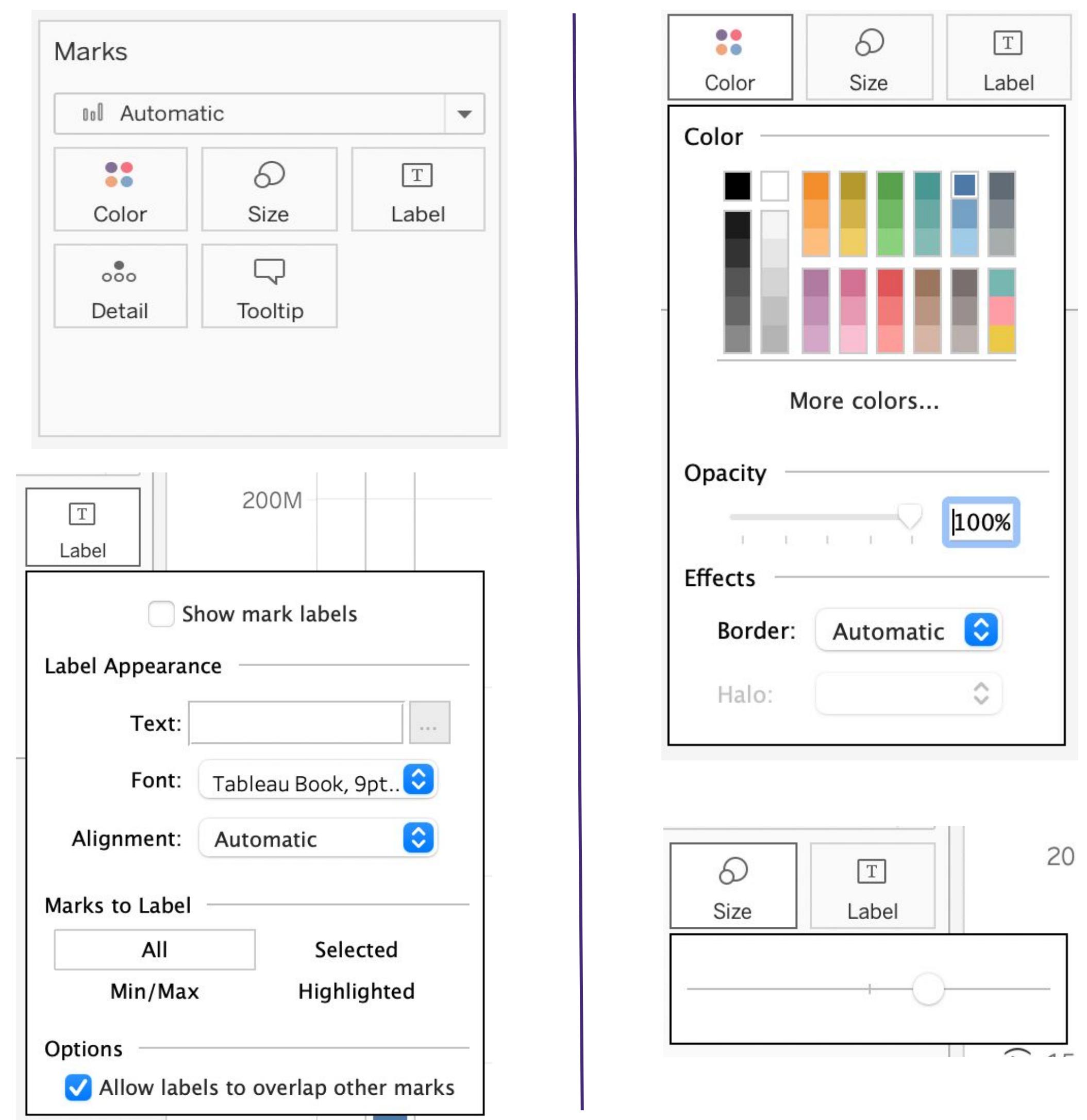
Workbooks vs. sheets view

- In Tableau, workbook and sheet file structures are used.
- A **workbook** contains a single view along with legends, cards, shelves, and a data and analytics tab in its sidebar.
- A **sheet** can be a story, workbook, or dashboard.



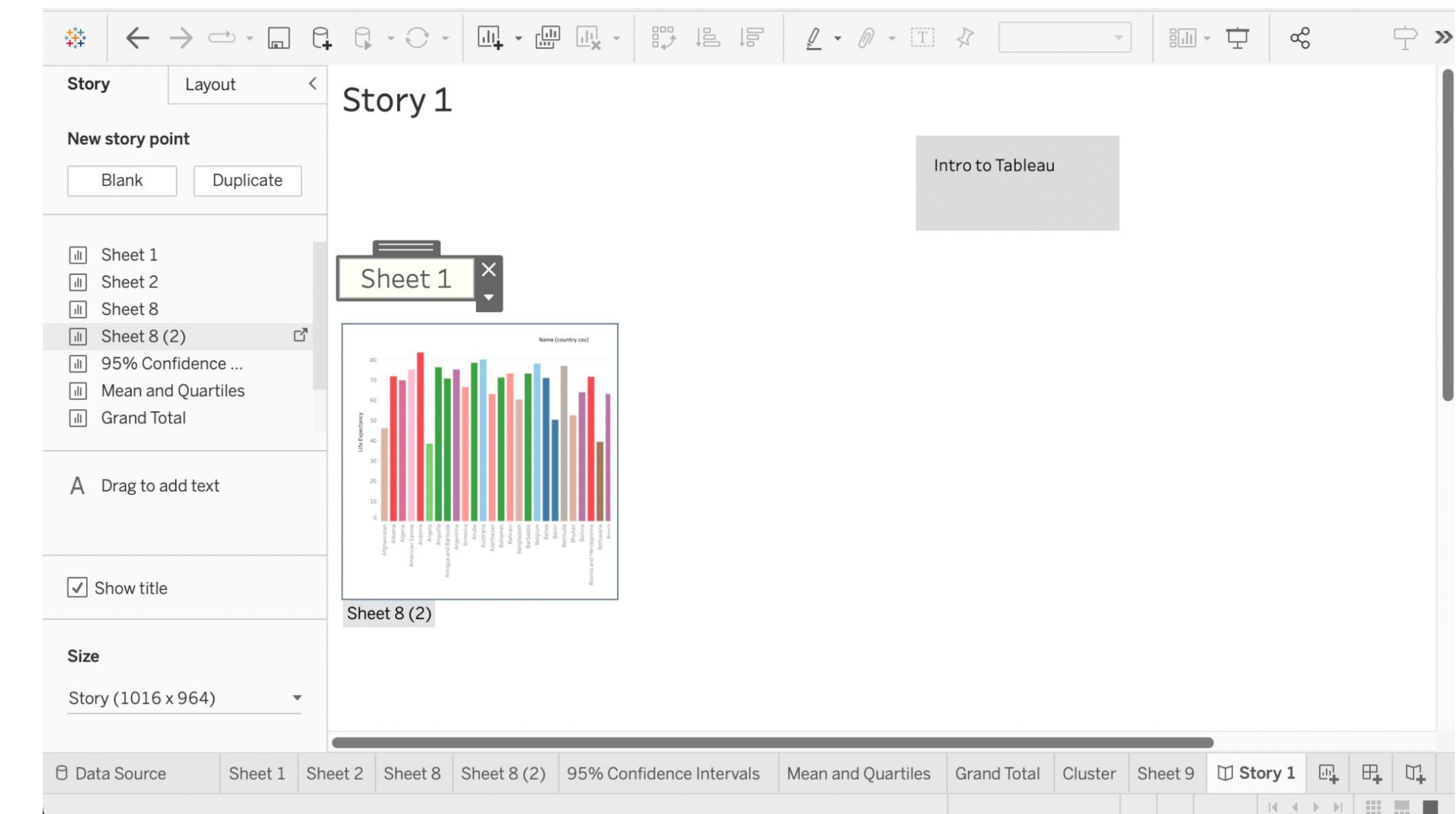
Marks panel

- To display data, Tableau uses **marks** where every mark corresponds to a single data point in the dataset.
- The default mark type depends on the values in the rows and columns shelves, but different types of marks can be selected using the marks panel.
- The Marks panel allows you to encode data with color, size, shape, text and details.



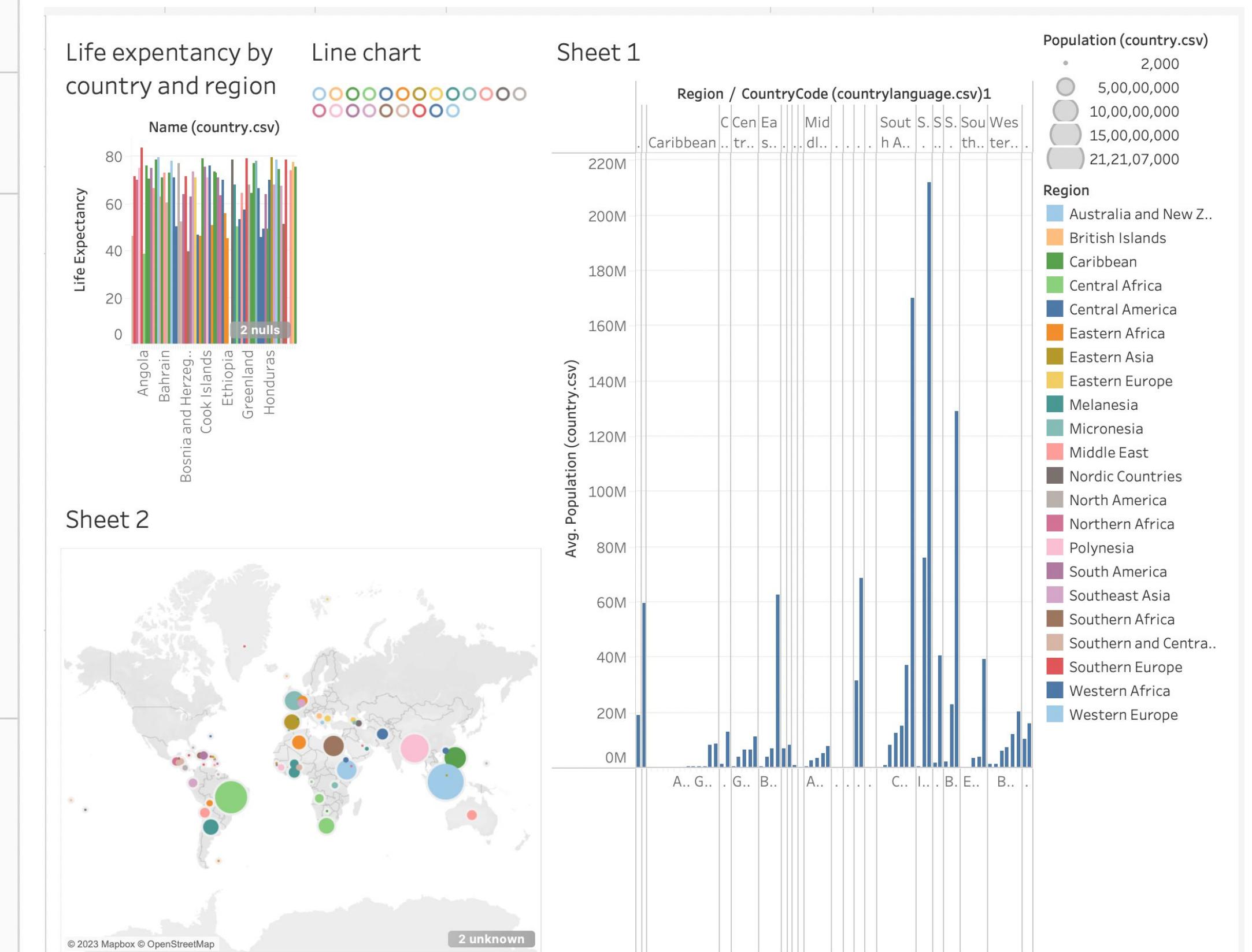
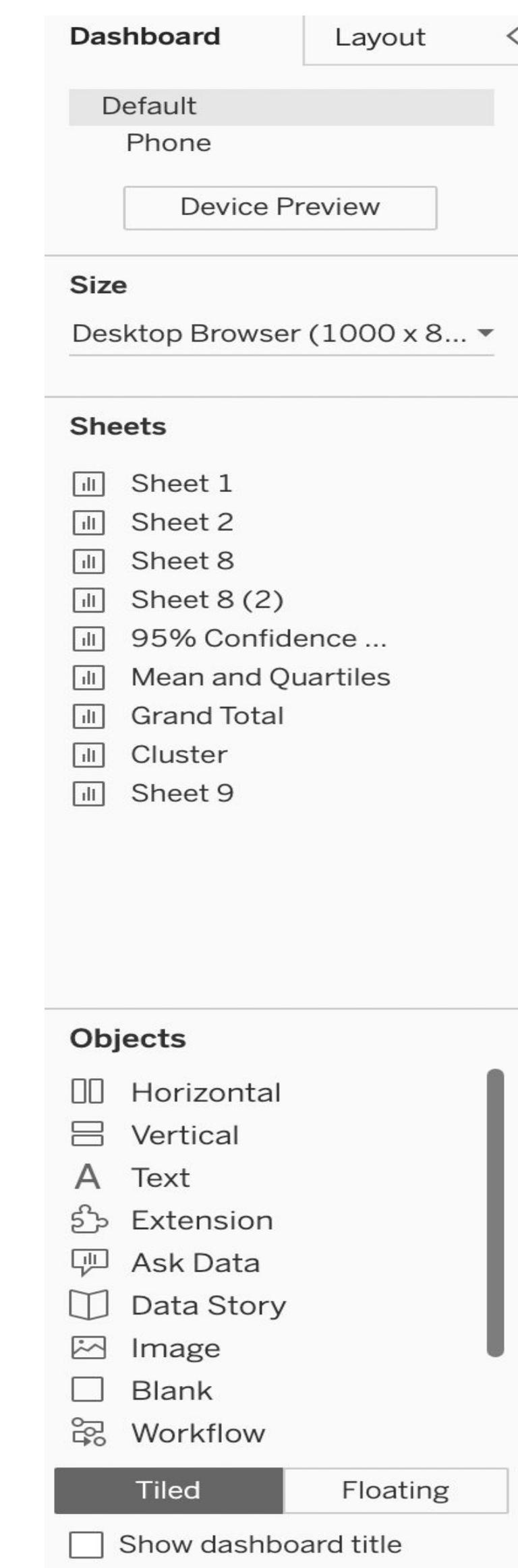
Story tab

- Tableau allows you to **create stories** by arranging a series of visualizations that work together to present information.
- You can add a title, text, and customize the size of a story using the story tab.
- The Story tab also lets you drag-and-drop the visualisation on a story sheet.



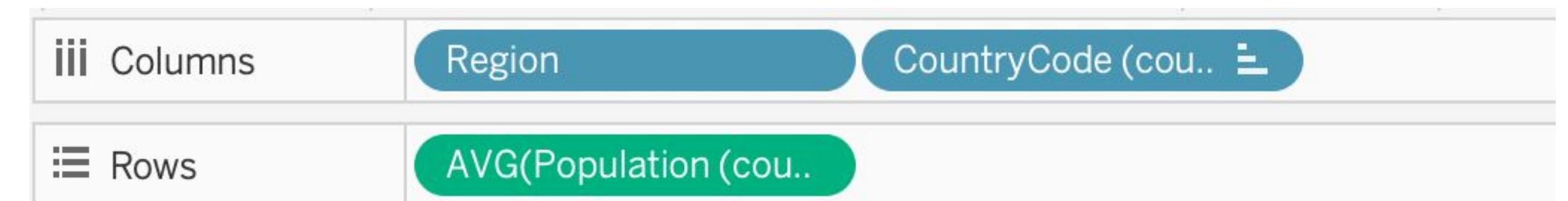
Dashboard tab

- The **dashboard tab** contains the list of all available sheets, and allow us to add multiple sheets on a dashboard.
- It contains variety of objects such as text, web page, button, extensions, etc.
- These objects makes dashboards more interactive and dynamic.



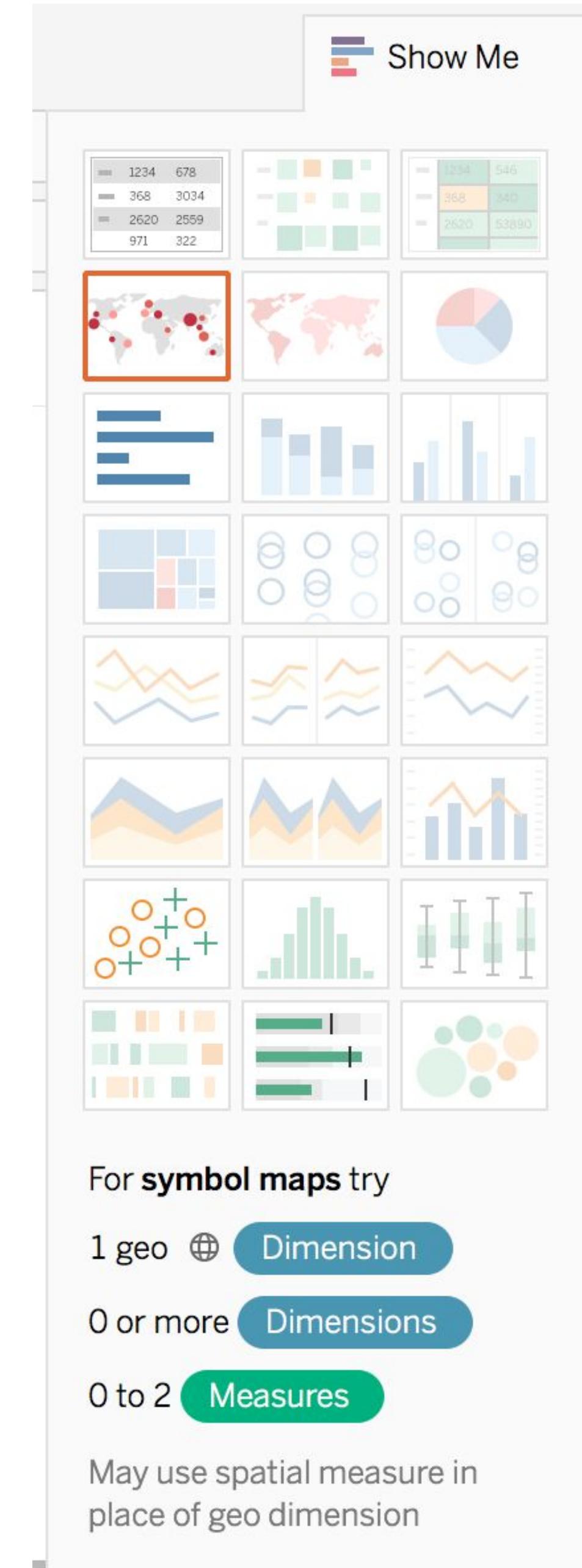
Column and row shelves

- Use the **column shelf** to create the columns in a table.
- Use the **row shelf** to create rows in a table.
- Any number of fields can be placed on these shelves.



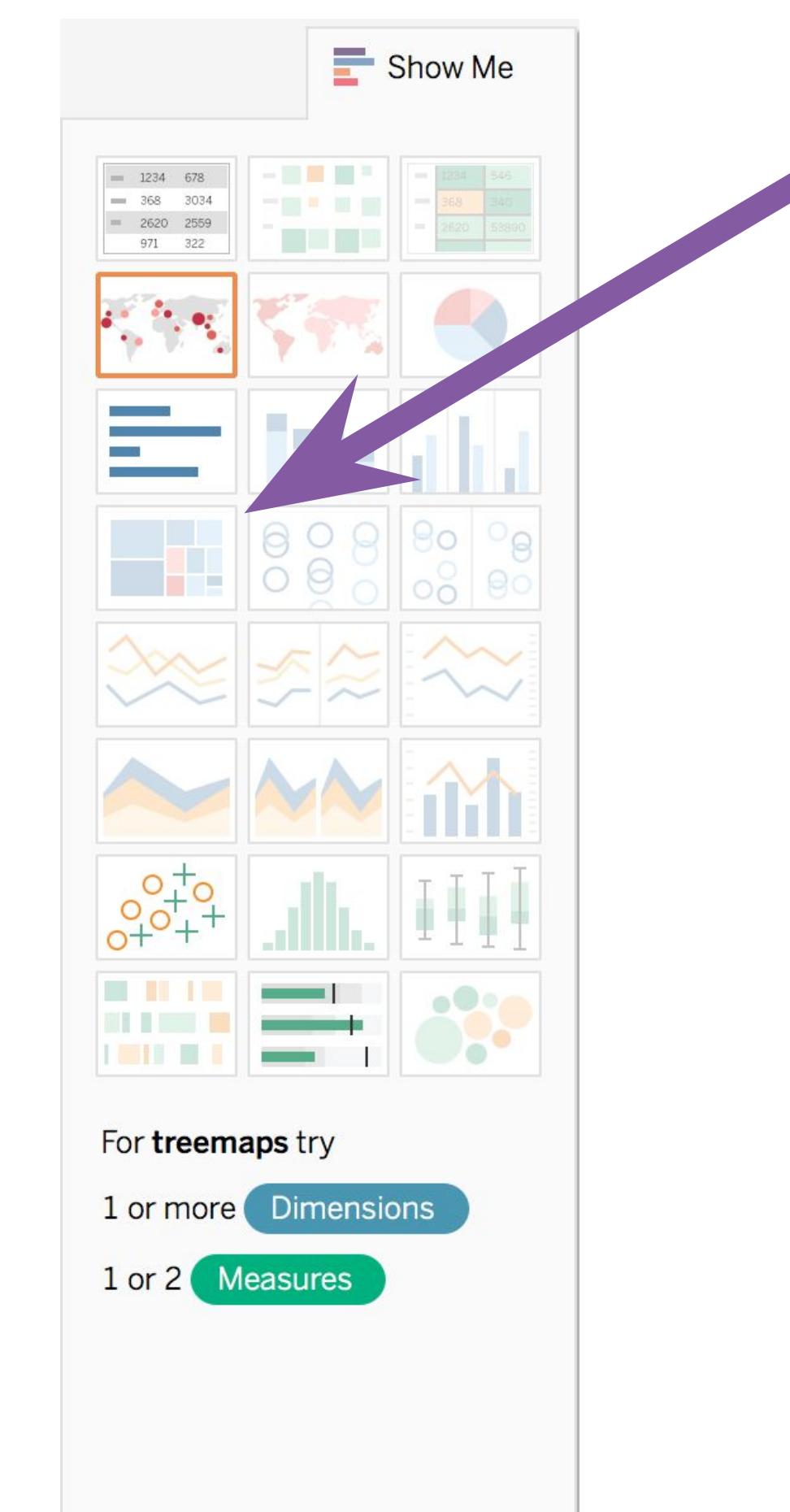
“Show Me” palette

- The “**Show Me**” palette makes it easy to choose the visualization that you want.
- Tableau automatically adjusts dimensions and measures to better fit your data to the map.
- It also suggests which visualizations might best suit the data you are working with.



Grayed-out “Show Me” options

- Grayed-out visualizations cannot be generated from the given data.
- When selecting a grayed-out visualization type, pay attention to the suggestions on the bottom.



Module completion checklist

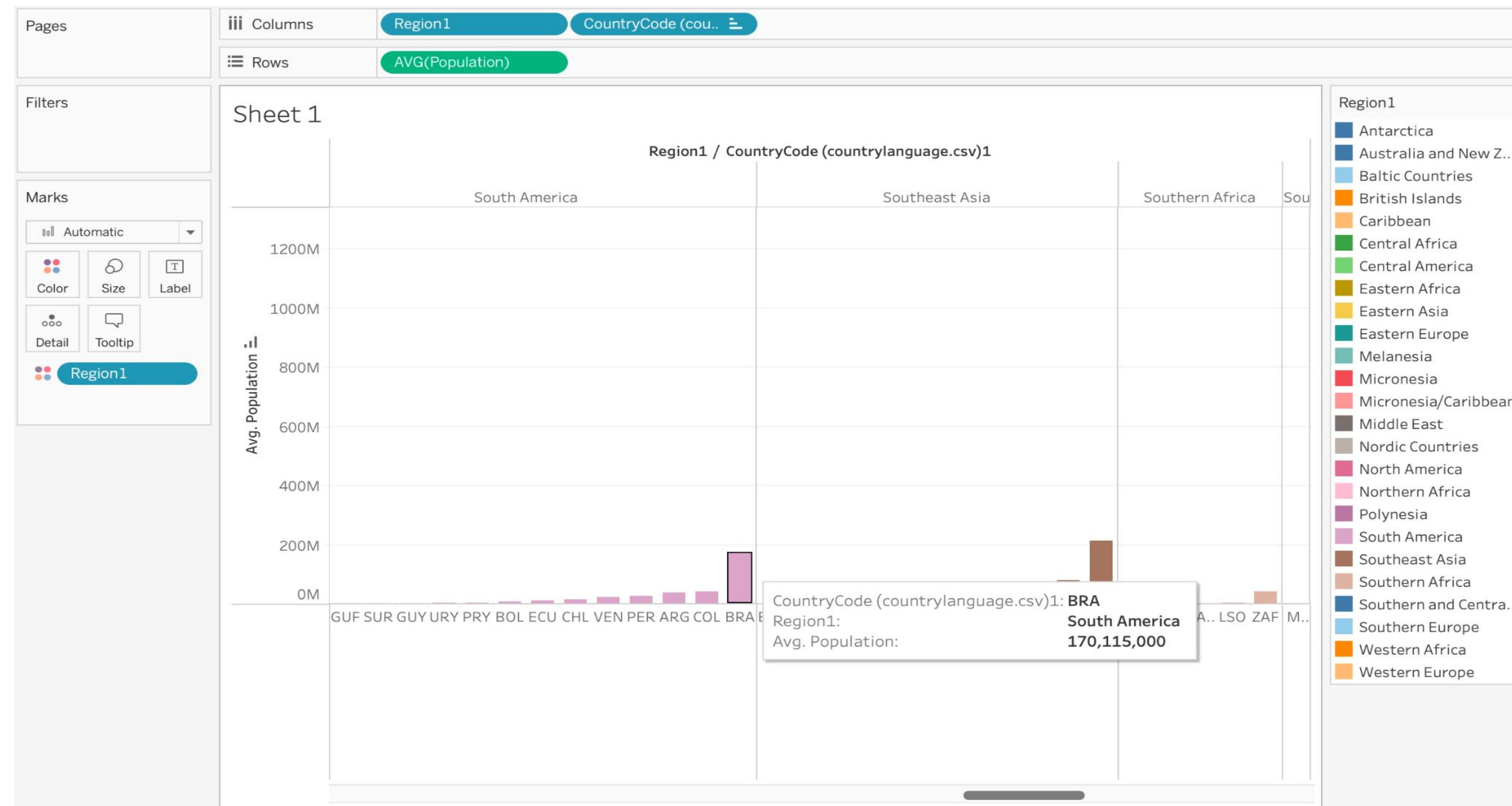
Objective	Complete
Explore the Tableau platform layout	✓
Create basic visuals using the World Data	

Save your work!

- We will now start creating visualizations in Tableau.
- We will see a lot of different insights from the data as we learn more about Tableau.
- **Make sure to save all your classwork (including exercises) on your local drive!**
- Over the coming classes, we will put these visualizations together into a story.

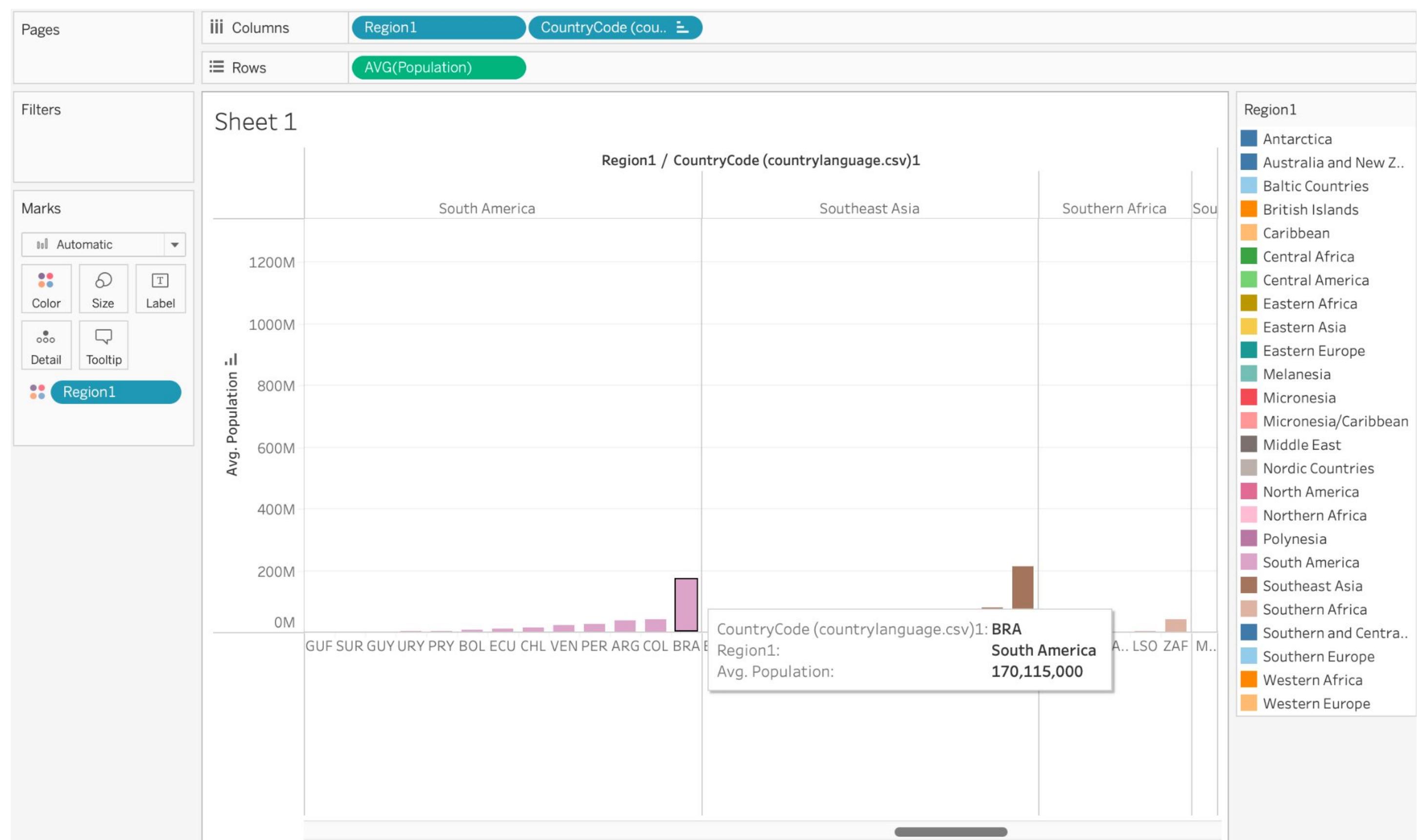
Data visualization: bar charts

- Let's plot **average population by country** and categorize the bar chart by **region**.



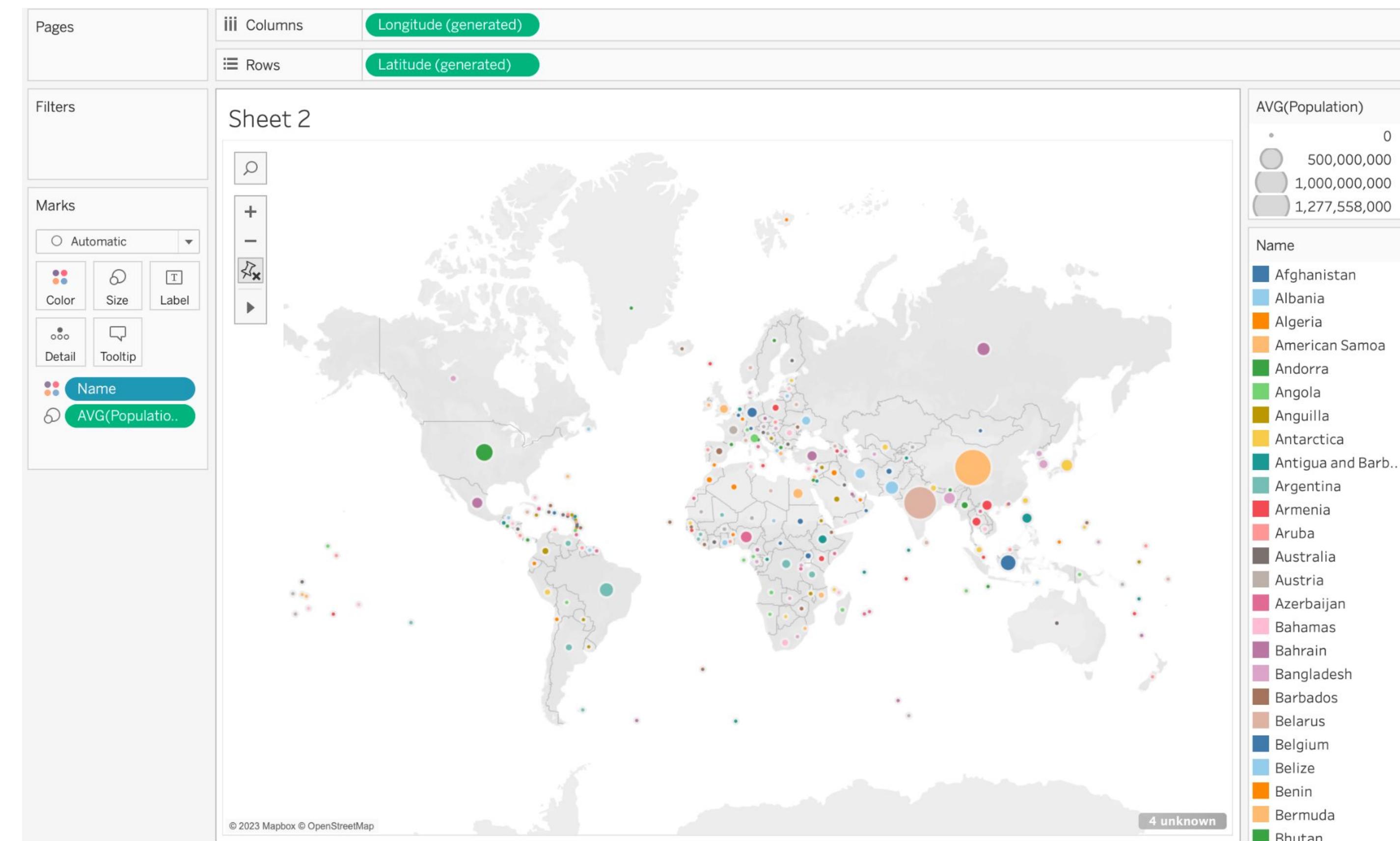
Evaluating our bar chart

- What do you see from the graph?
- Is there anything that you would change?
- What follow-on visualizations might you make? Why?



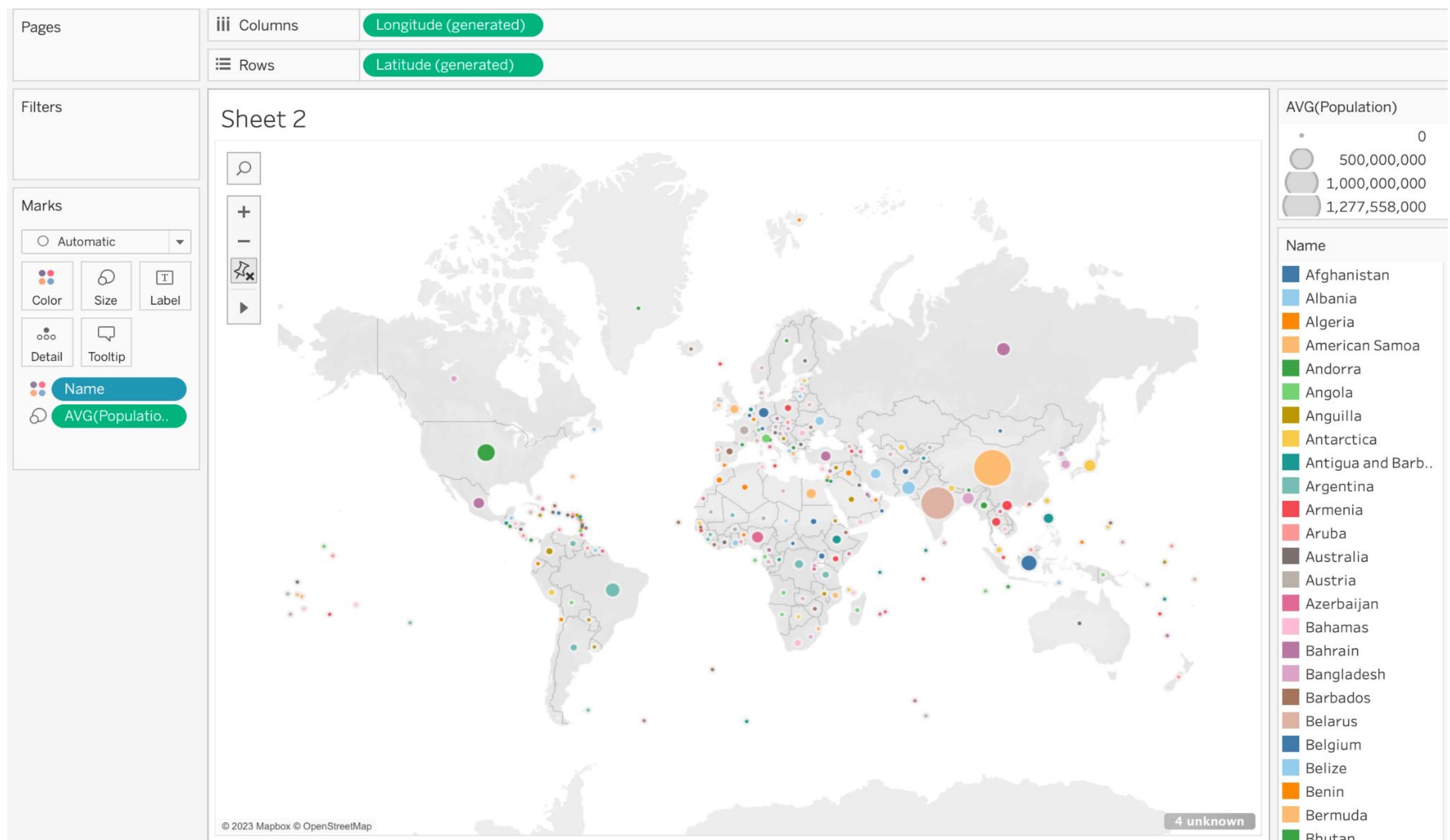
Data visualization: symbol map

- We will now plot the same information on a **map**.



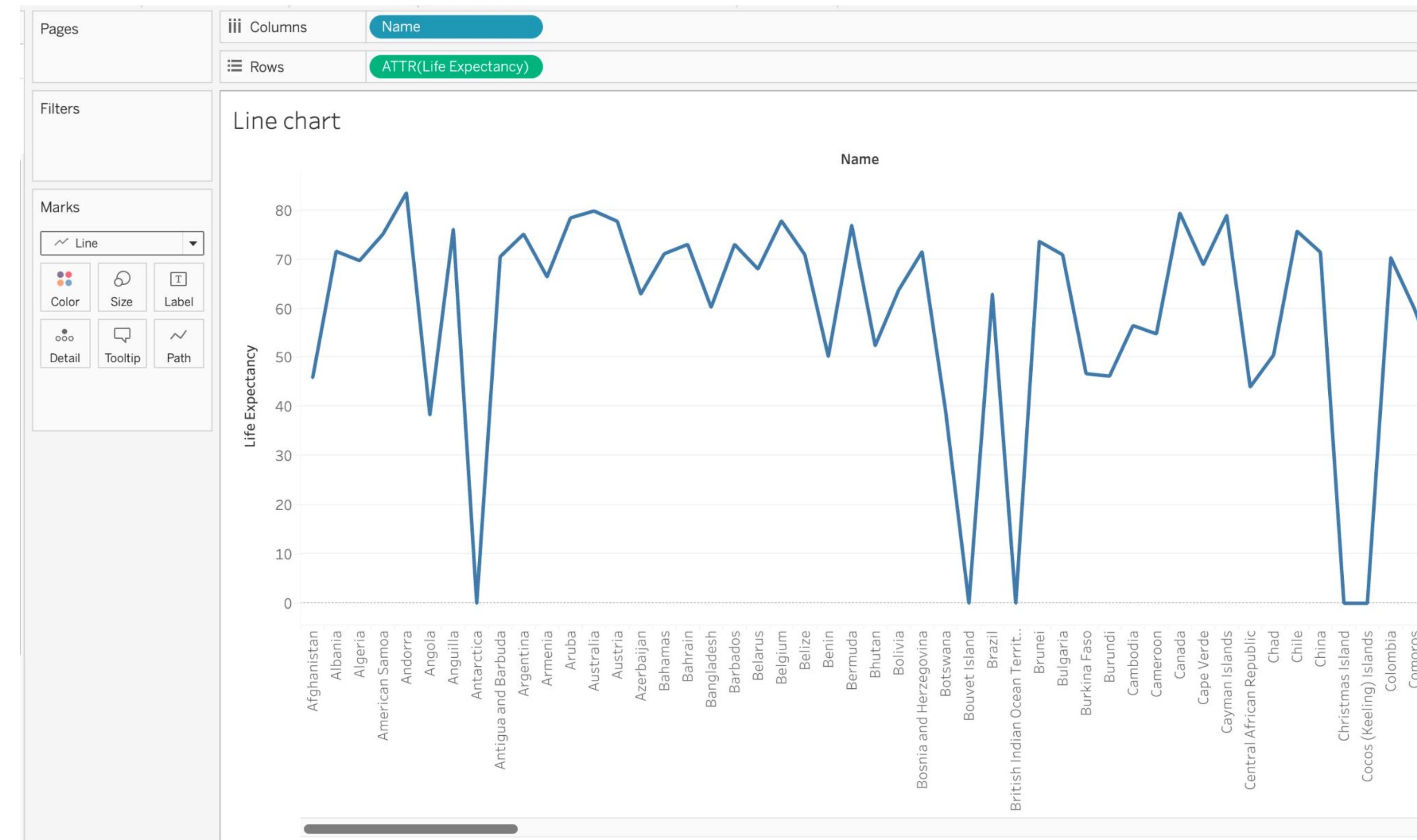
Evaluating our symbol map

- Is this view of the data better? Worse?
- Is there anything that is missing from the data?
- How might you make the map more usable?



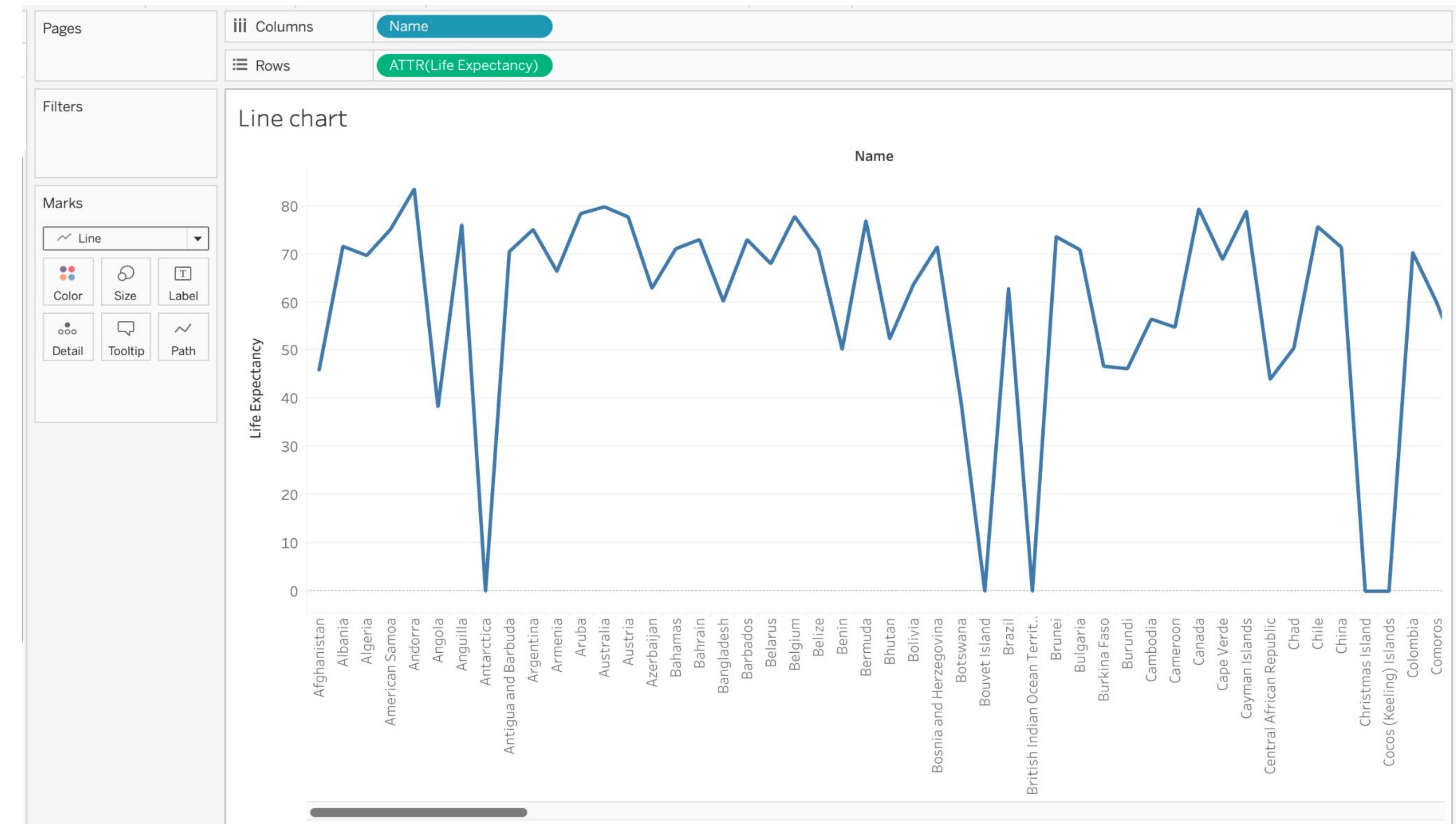
Data visualization: line chart

- We will now make a third graph, **life expectancy by country**.



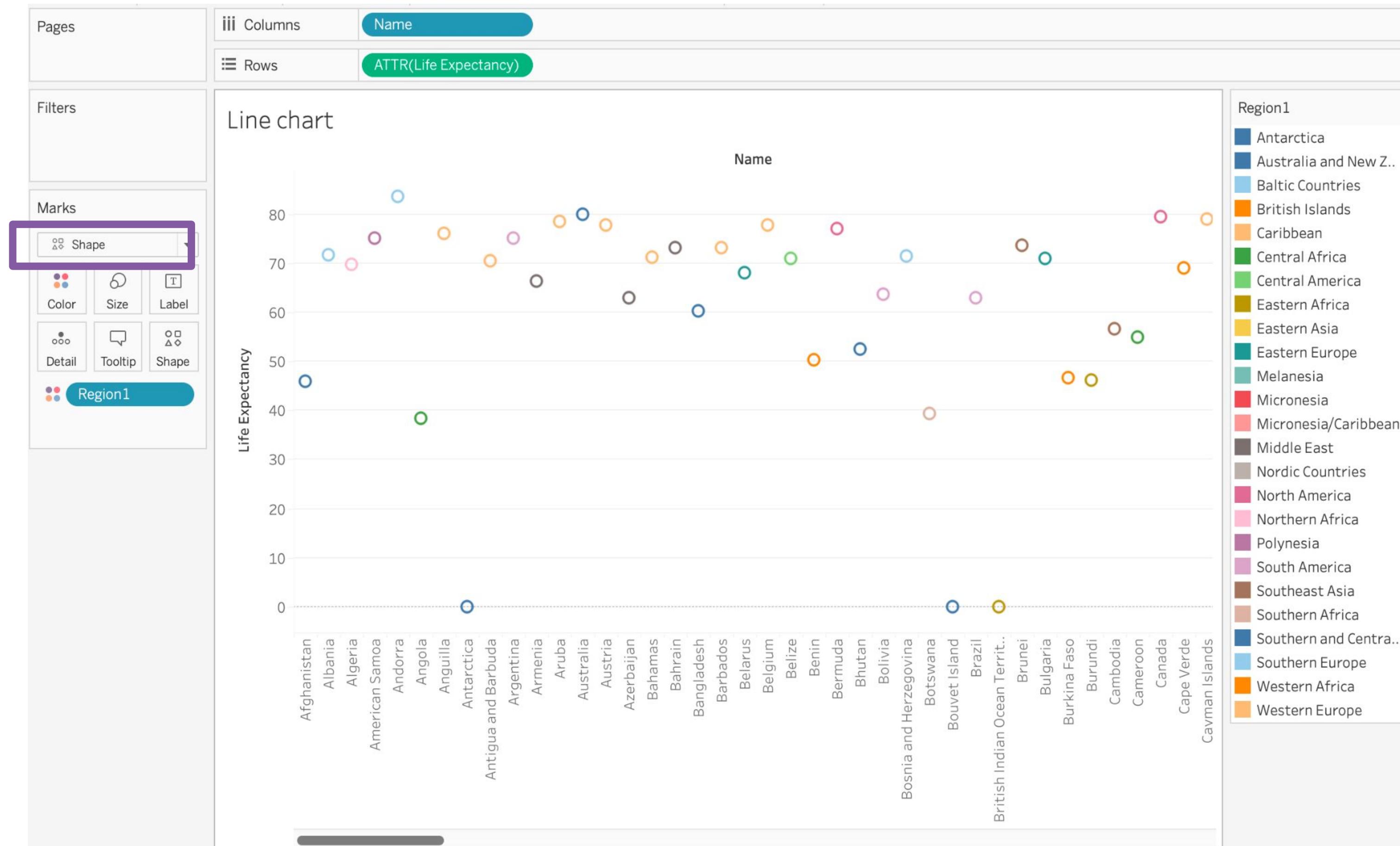
Data visualization: line chart

- What do you see from the graph?
- Is there anything that you would change?
- What follow-on visualizations might you make? Why?



Data visualization: shape plot

- Let's use **points** to visualize the **regions** that contributed to the graph.



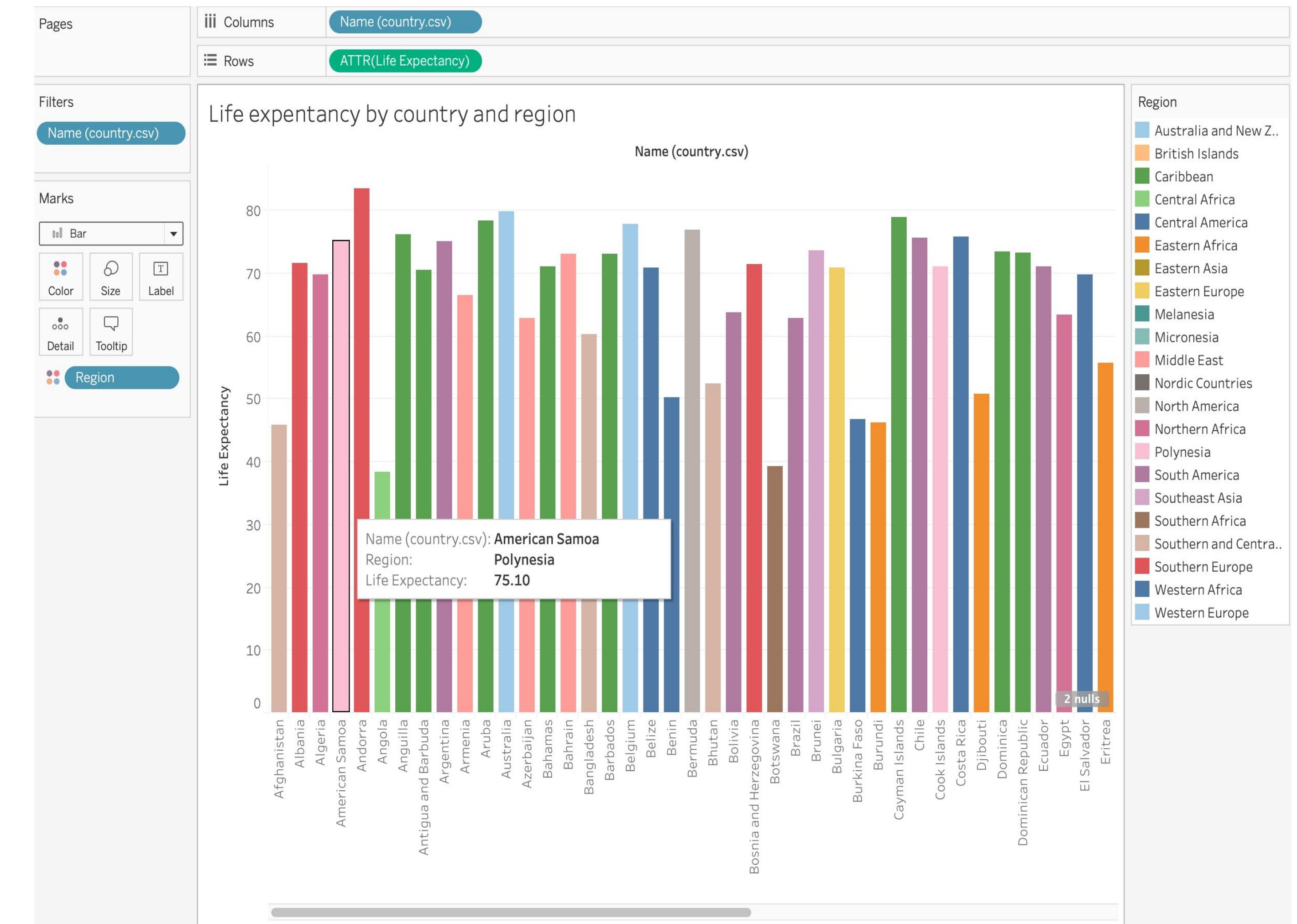
Color shape plot by region

- **Annotation** by region allows us to drill down.
- We can see regional clustering of countries and their life expectancy.



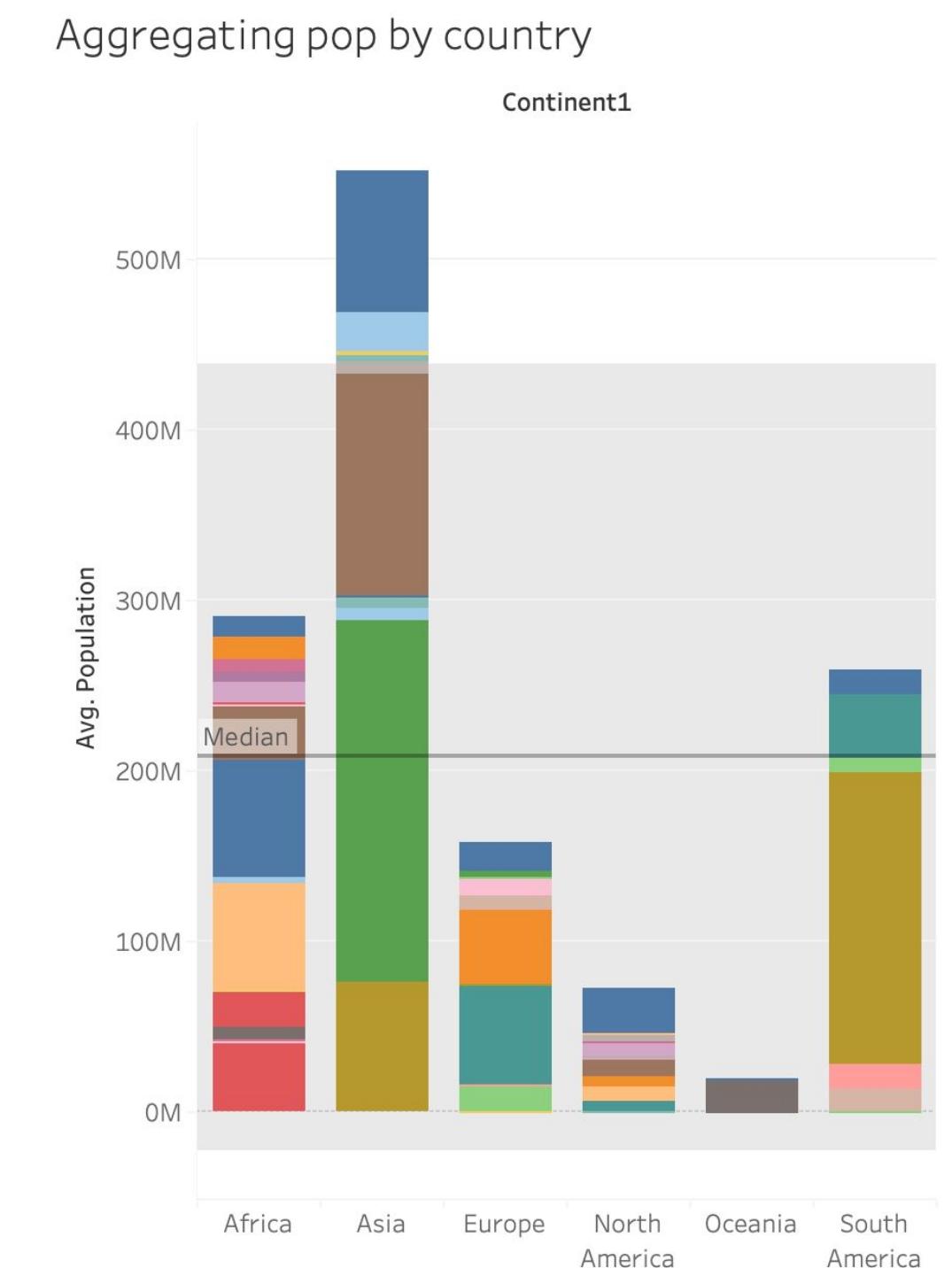
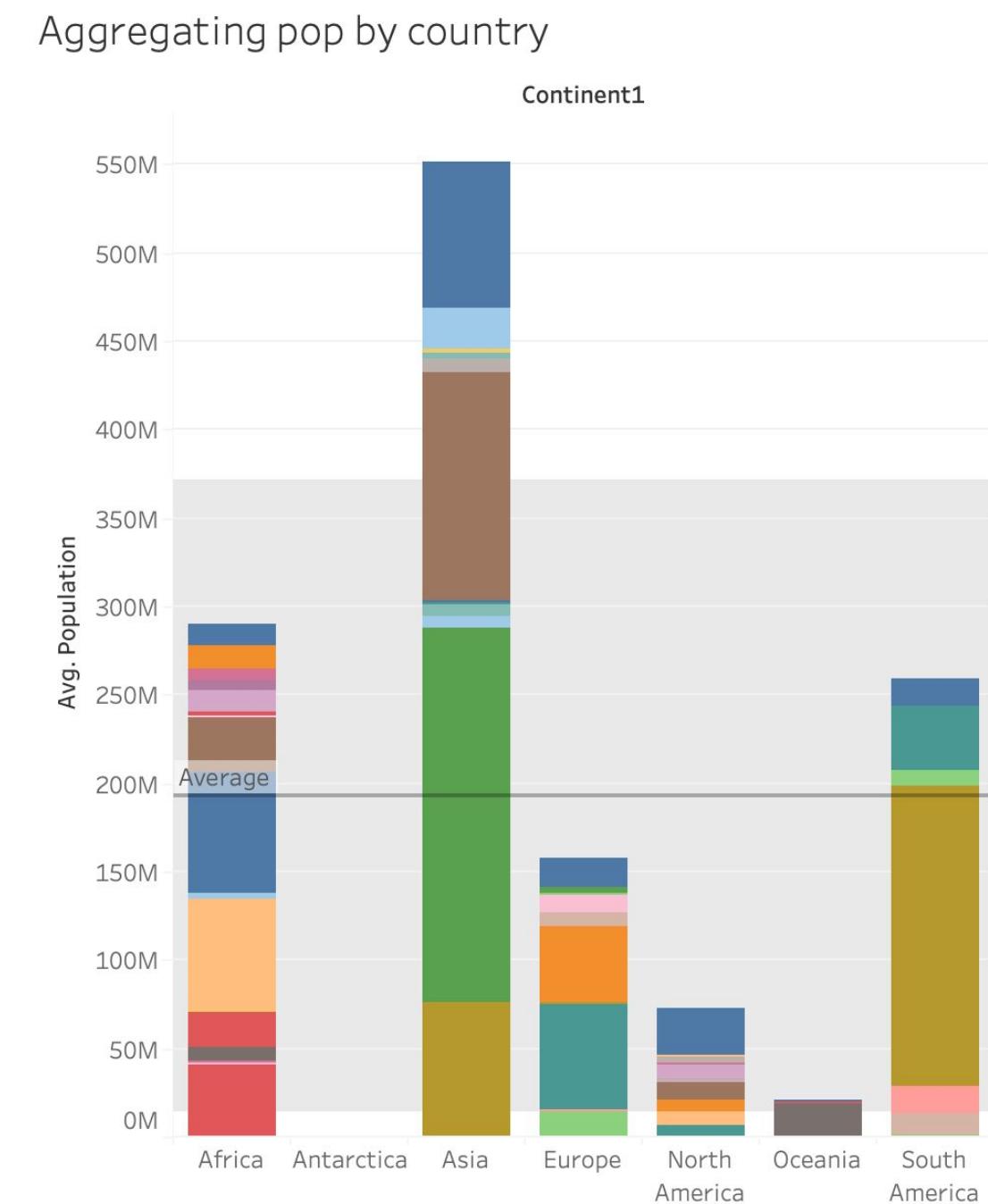
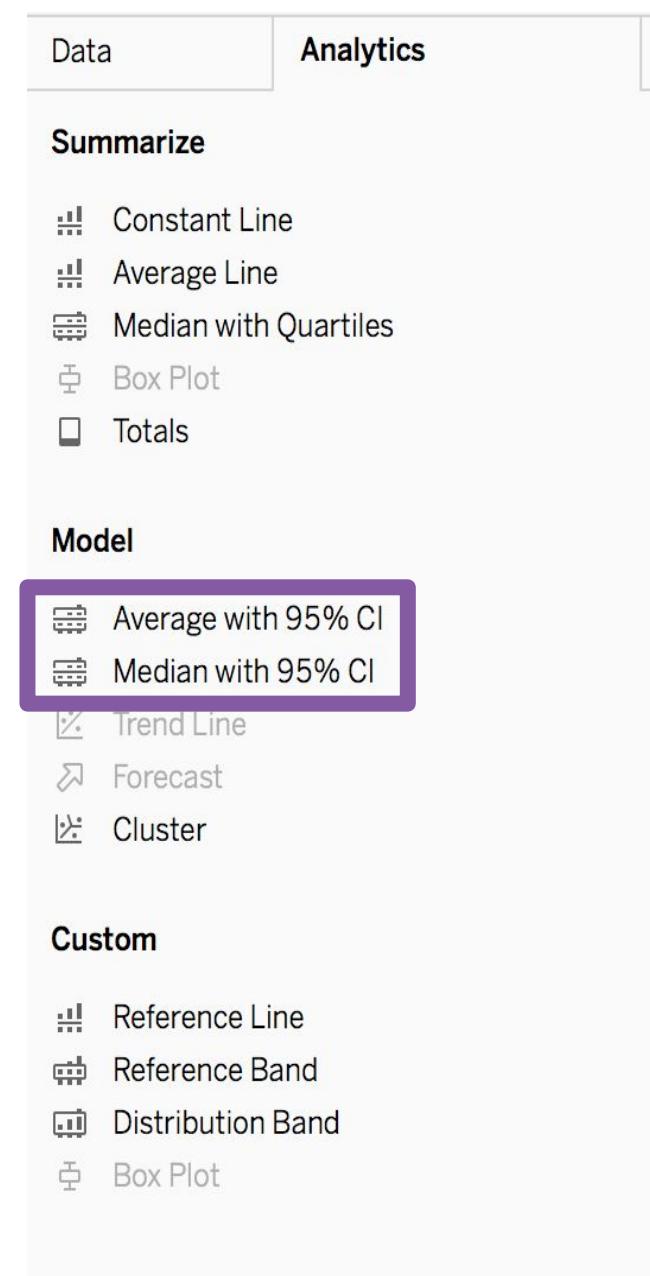
Data visualization: bar chart, revisited

- We previously used bar charts to plot the average population.
- Let's revisit bar charts to plot the life expectancy information categorized by region.
- As we can see, there are many different ways to plot the same information.
- The trick is to find the visual that best suits the use case.



Annotating with the Analytics tab

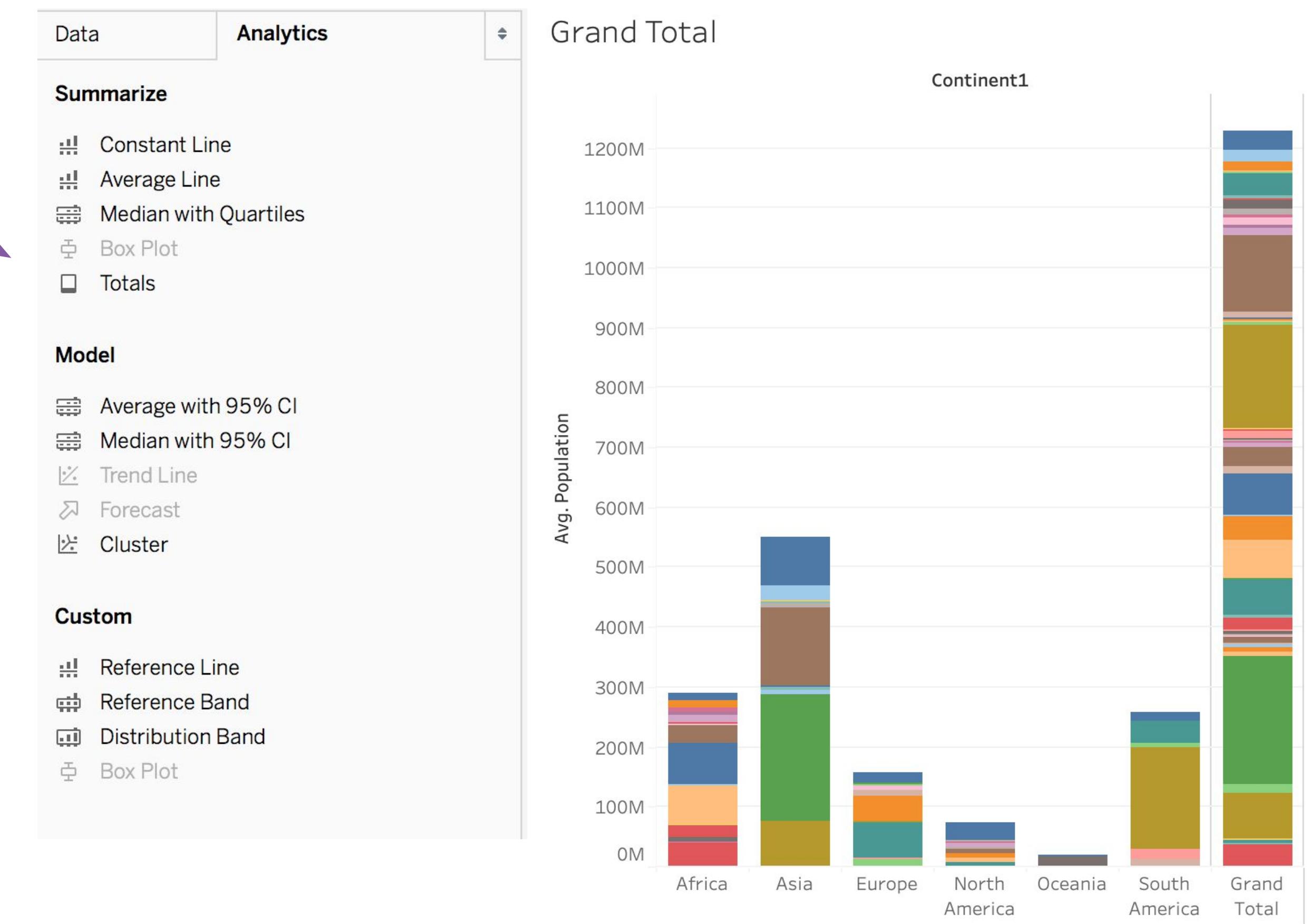
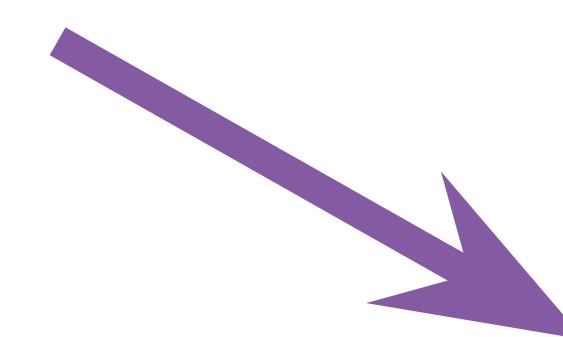
- From the **Analytics** tab, you can annotate features like central tendency and distribution.
- Mean line with 95% confidence interval
- Median with quartiles with 95% CI



- You can even manually add lines.

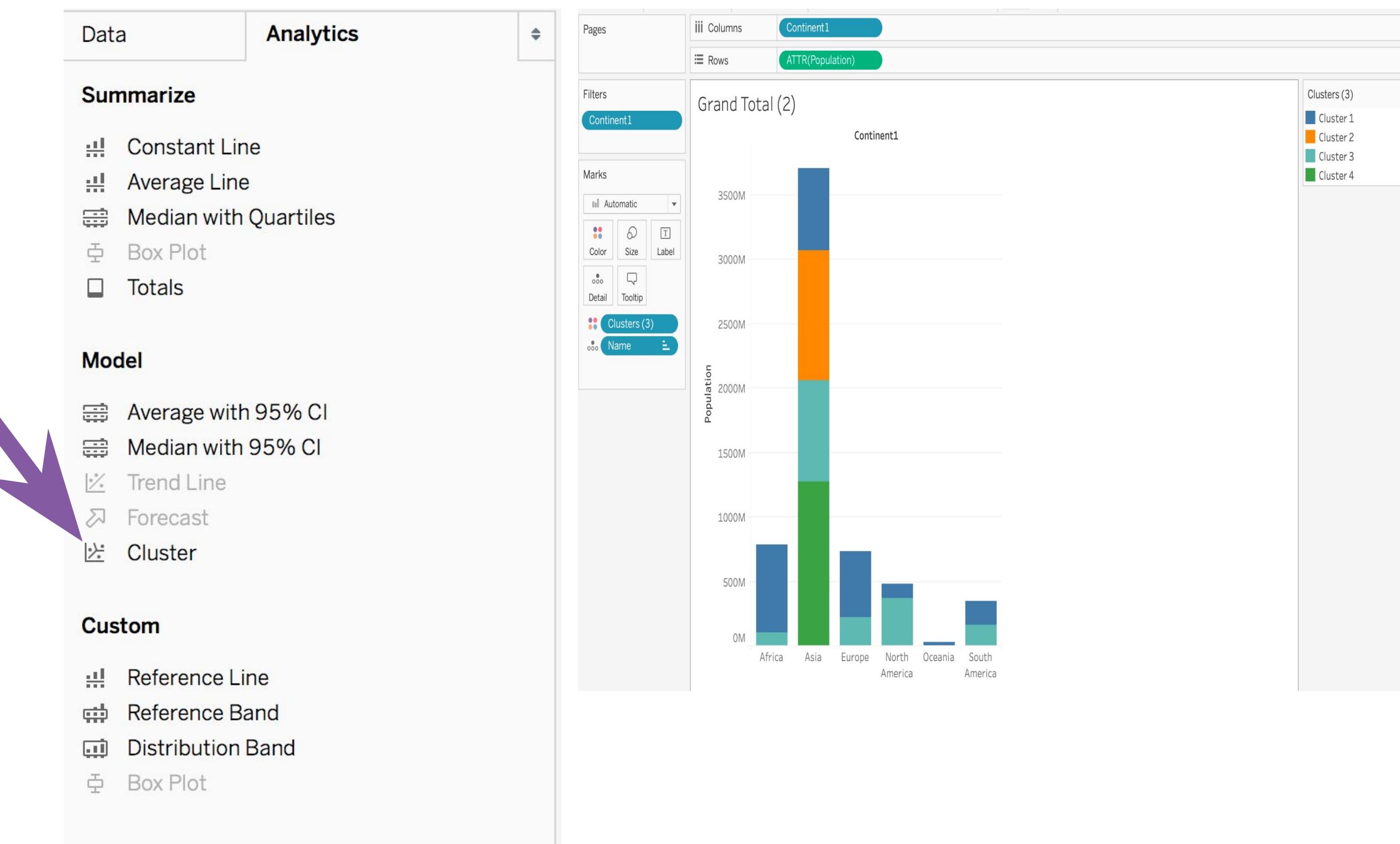
Totals in the Analytics tab

- We can also get a grand total column appended to the end of our visualization.
- Can anyone spot a **red flag** to look out for after the totals are graphed?



Clustering in the Analytics tab

- We can use clustering to automatically cluster by any attribute.
- Here we automatically clustered by attribute: population size.
- Cluster the data on your analysis.



Summing up the world data

- Let's go through our **critical insights** from this analysis.
 - Bar chart of populations
 - Map of populations
 - Line chart - life expectancy
- What are some **next steps** in this analysis?
 - What analysis would you do next?
 - What data would you like to have that you do not have?

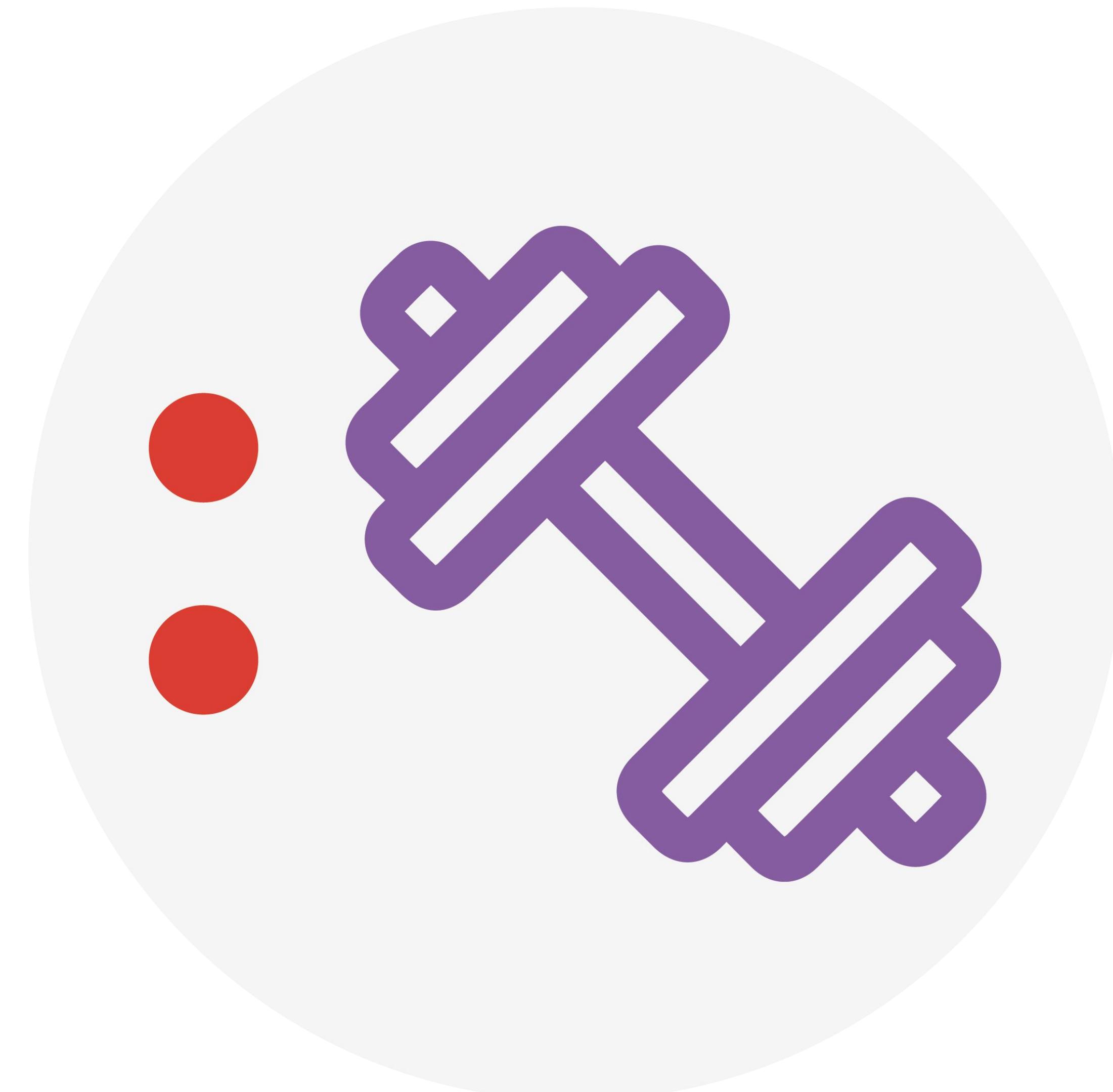
Data integrity

- **Data integrity** refers to the completeness, representativeness, and cleanliness of a given dataset.
- Can you identify any likely gaps, anomalies, or untidiness in the data?
- How would you deal with these?
- What did you check?
- Is there anything that you should check but did not have time to?

Knowledge check 2



Exercise 2



Module completion checklist

Objective	Complete
Explore the Tableau platform layout	✓
Create basic visuals using the World Data	✓

Congratulations!

In the past few modules, we covered:

- Importing data
 - CSV
 - SQL server
- Tableau parts
- Data integrity
- Dimensions and Measures
- “Show Me” palette
- Charts and Figures
 - bar chart
 - symbol map
 - shape plot
 - line plot
- Analytics tab
 - annotations
 - clusters
 - total

Next steps

In the next few modules, we will cover:

- Grouping and Aggregation in Tableau
- Filtering options

: End of Part 2

