

# DATA SOCIETY:

## Introduction to Tableau

Part 6



# Module completion checklist

Objective	Complete
Discuss formatting options in Tableau	✓
Explain the concept of functions	
Implement basic functions on the dataset	
Introduction to table calculations	

# Tableau functions

- Tableau's **built-in functions** are essential for being able to customize your data representation.
- Just as you might need to learn Excel commands and SQL functions, we will need to get familiar with Tableau's syntax.
- For a complete listing of Tableau's function repertoire, you can have a look at the [documentation \[link\]](#) on the tool's website.

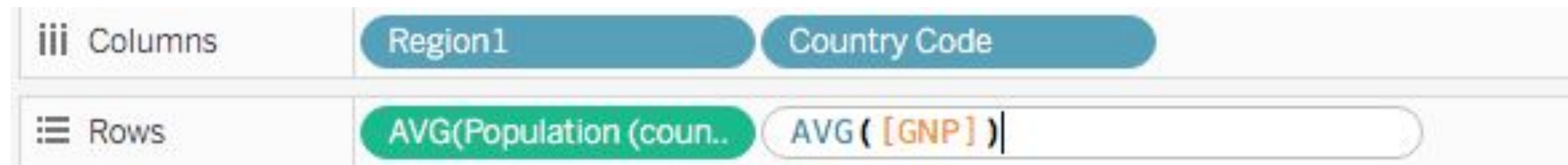


# Function types

- Tableau functions are classified into several types.
- These include:
  - Number Functions
  - String Functions
  - Date Functions
  - Type Conversion
  - Logical Functions
  - Aggregate Functions
  - Pass-Through Functions (RAWSQL)
  - User Functions
  - Table Calculation Functions
  - Spatial Functions
  - Additional Functions
- To see Tableau functions separated by type, visit [this page \[link\]](#).

# Creating a function: option 1

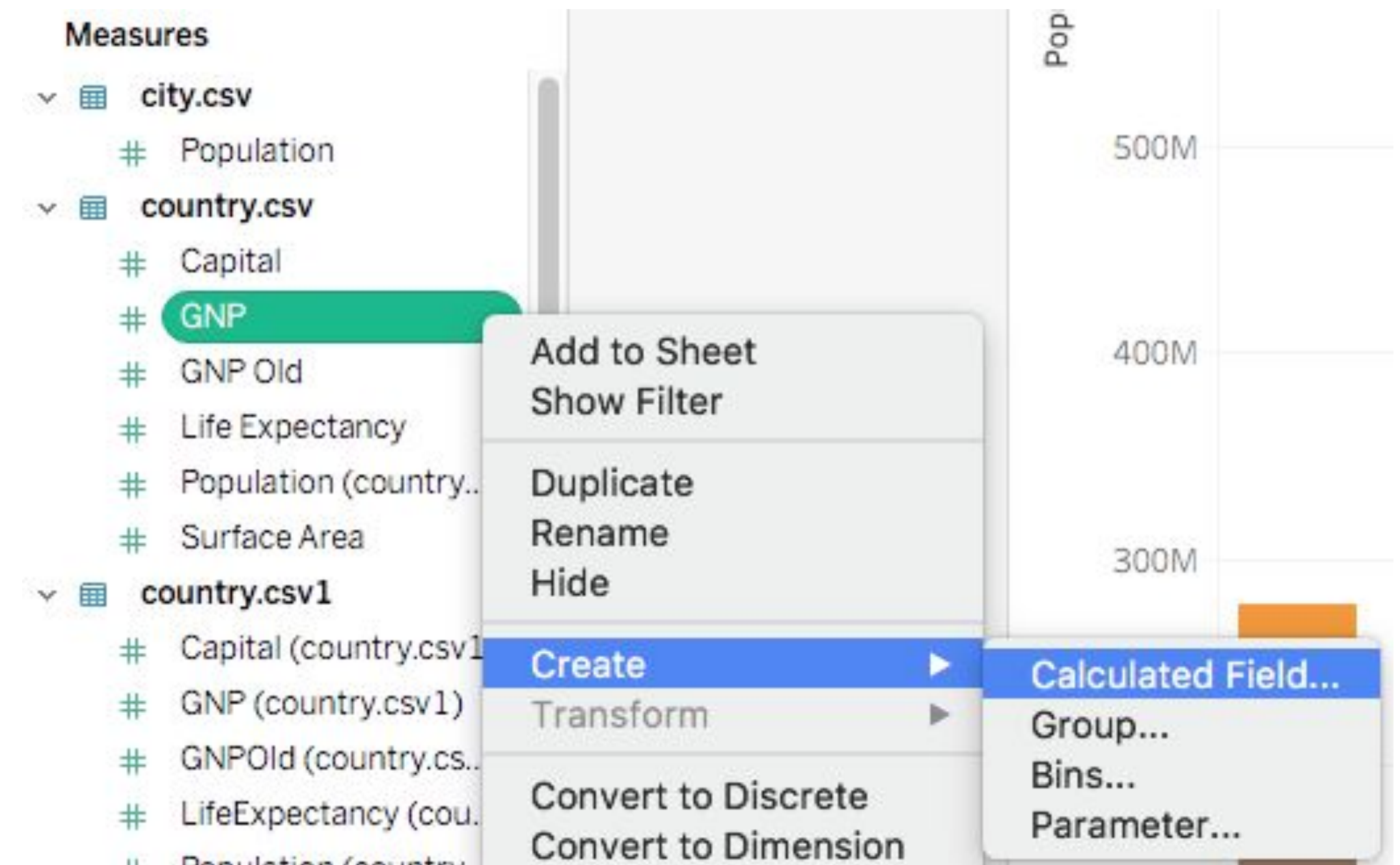
- There are two ways to create functions in Tableau.
- **Option 1:** Specify directly in the “shelf.”



- Useful for simple calculations.
- This creates data in the view without adding a new column.
- **Note:** You can create a new column by dragging it to the data pane.

# Creating a function: option 2

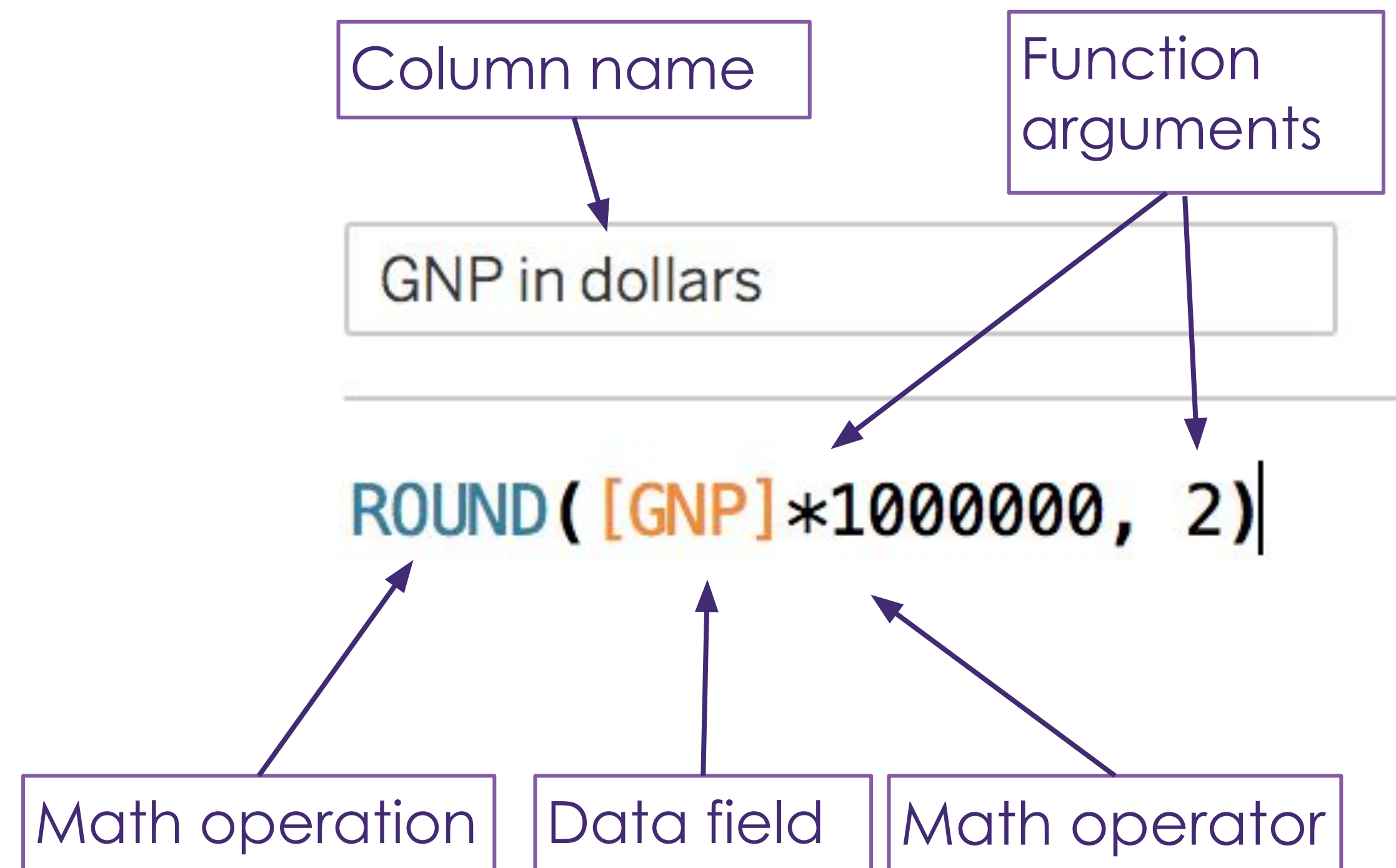
- **Option 2:** Specify with the **menu**.
  - Useful for more complex calculations.
  - Creates a new column in data.



# Basic function syntax

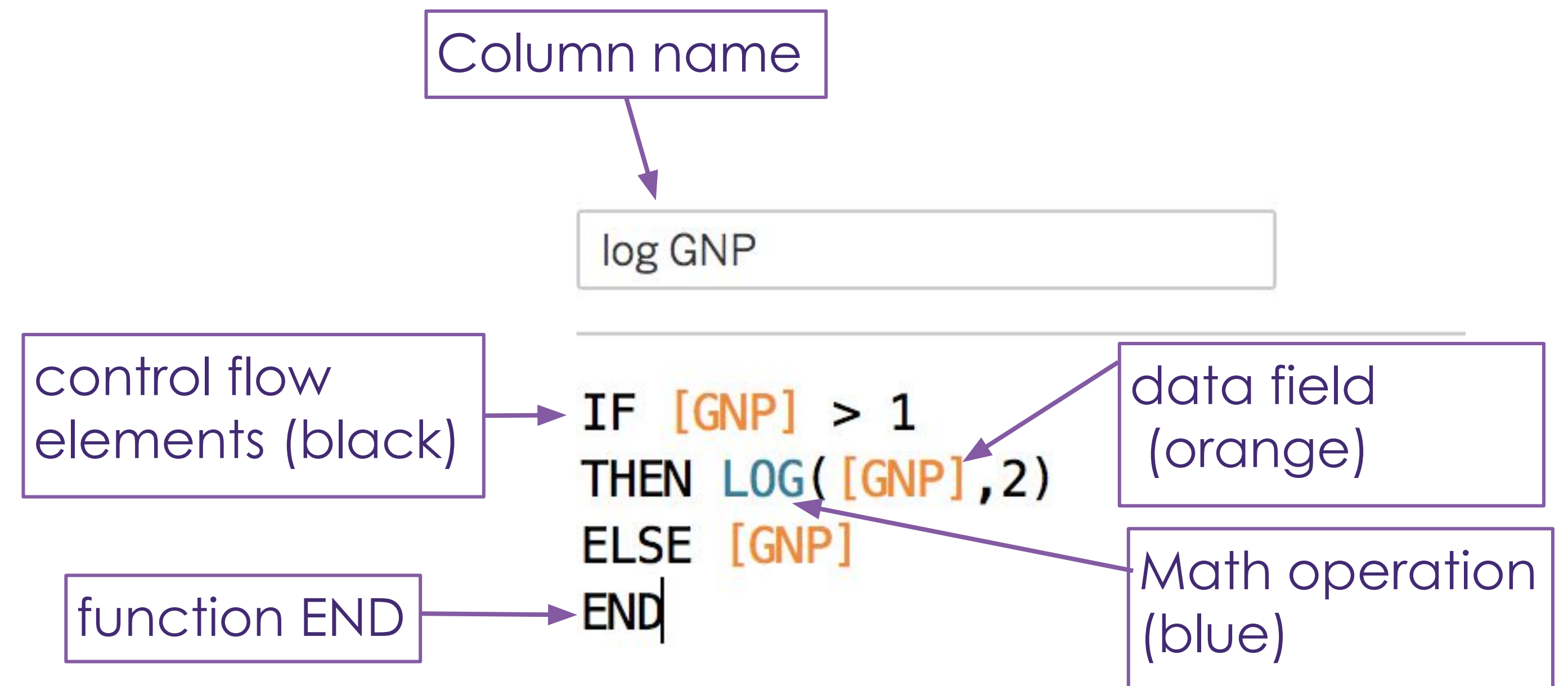
- **Function parts:**

- Built in functions
  - control flow (**black**)
  - math operations (=, -, /, \*...)
  - logical operators (<, >, =)
  - math functions (**blue**)
- Fields from data pane (**orange**)
- Strings (demarcated by “ ”)
- Integers



# Control flow using function syntax

- This is a simple function that gets the log of the GNP data column.
  - Base 2 log for values > 1.
  - Otherwise it takes the value.



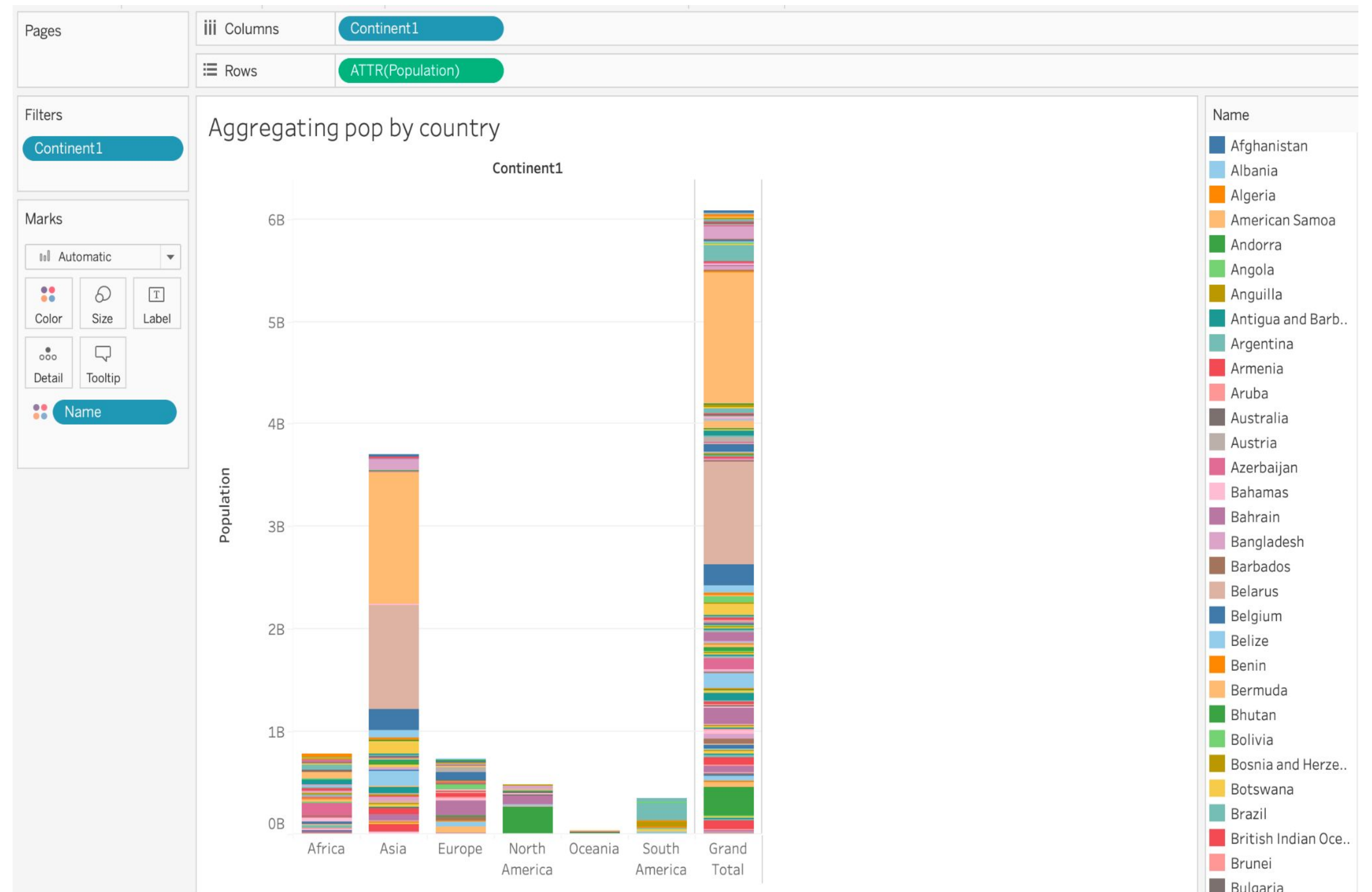


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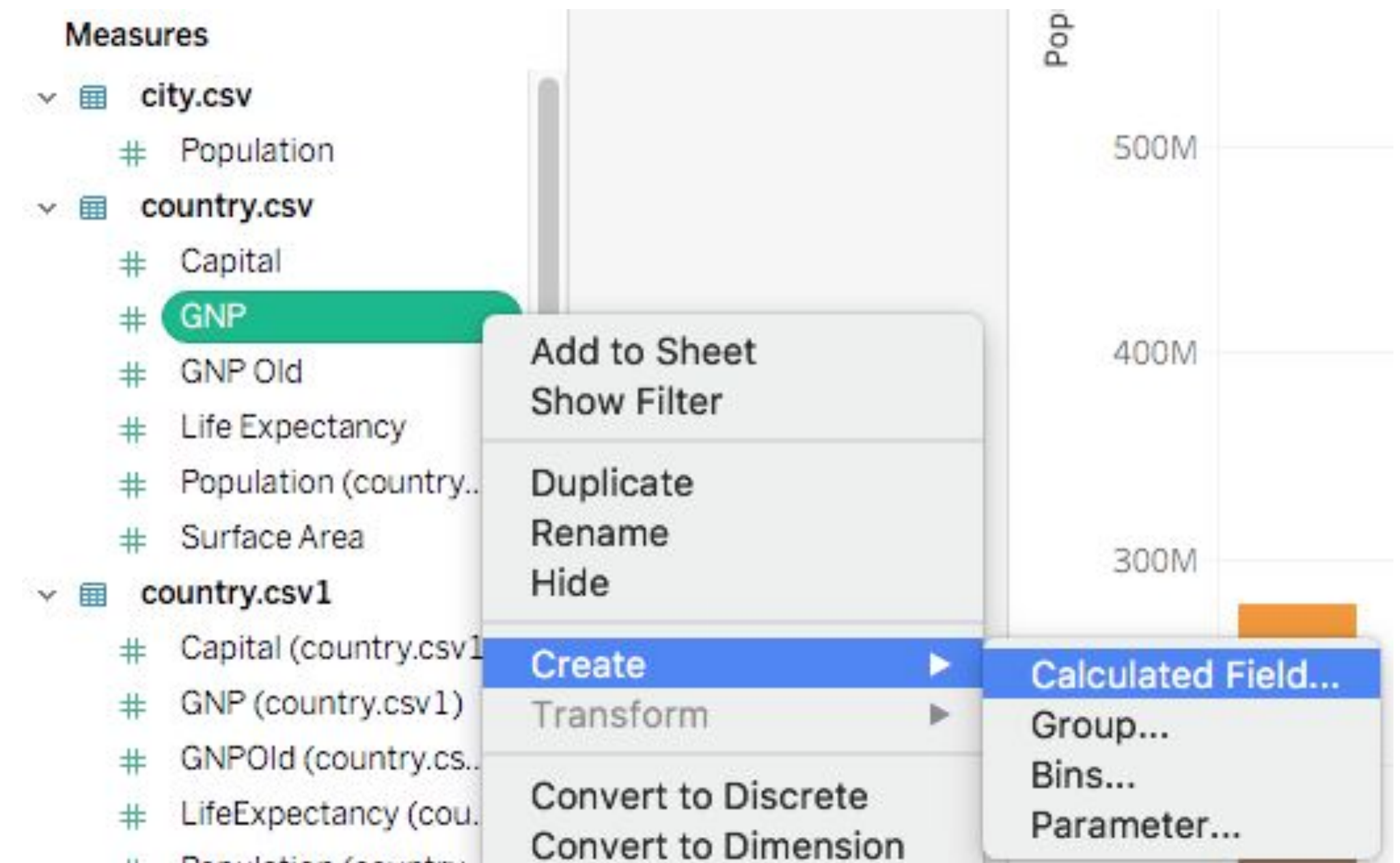
# Create a basic population chart

- Before creating and implementing our first function, let's start by creating a **continent-level population analysis graph**.



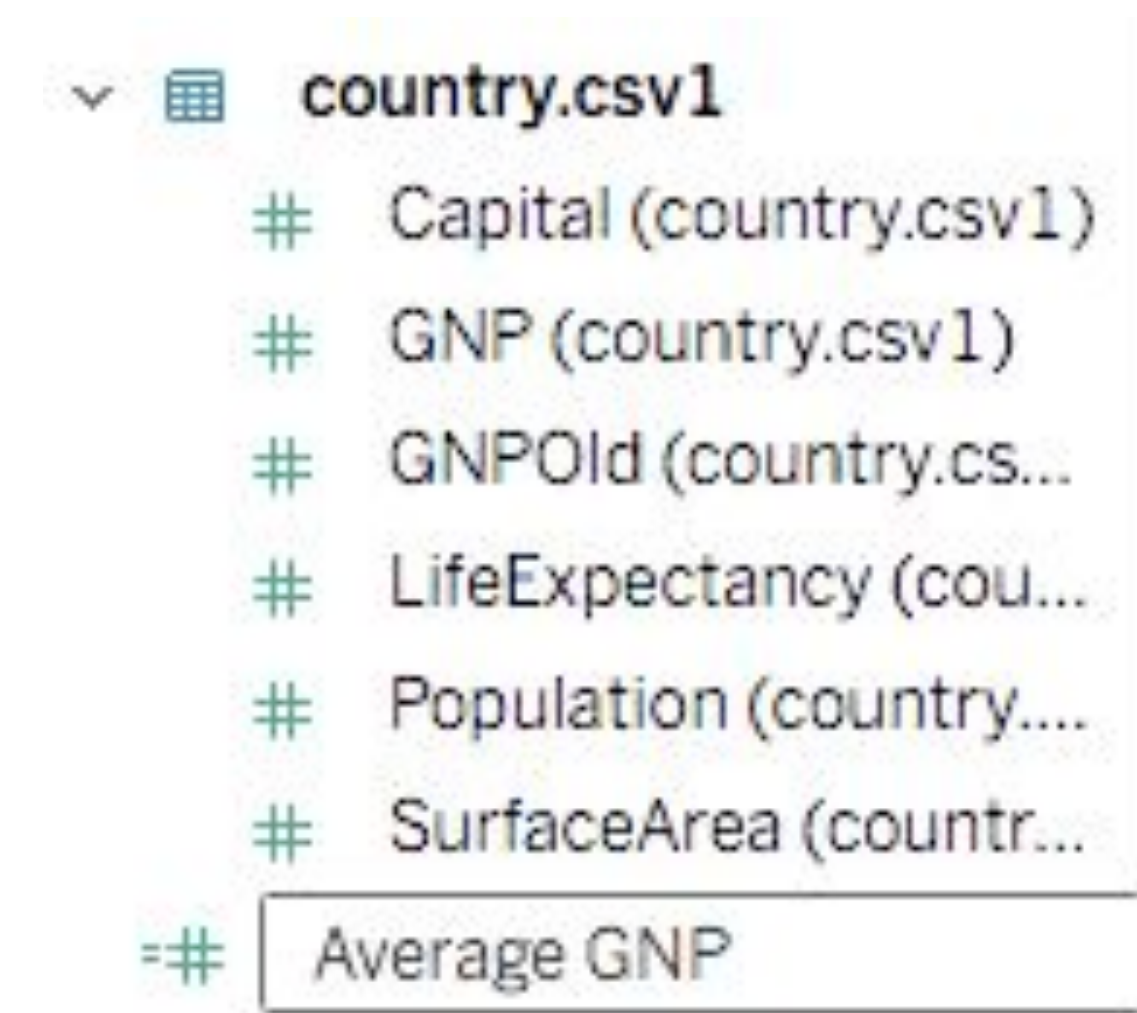
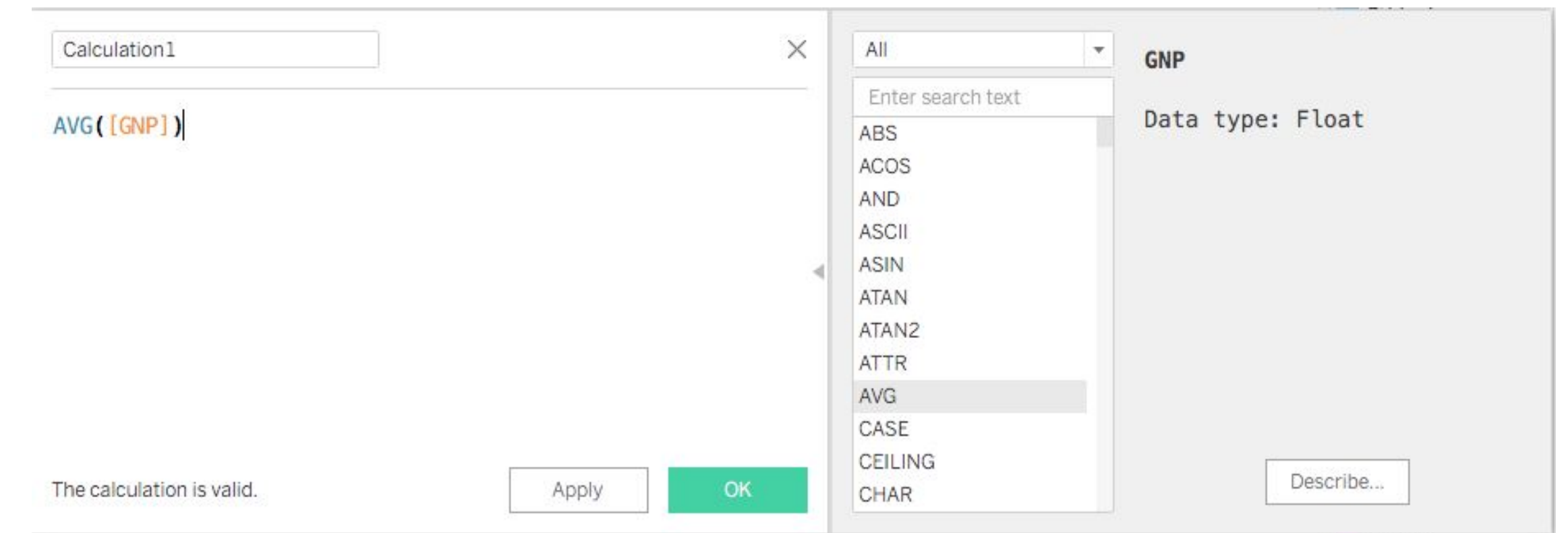
# Creating a function

- We will now create our first function in Tableau using **GNP**.
- Right click on the GNP field to get to the calculation pane.
  - Then select “Create” > “Calculated Field...”



# Validating a function

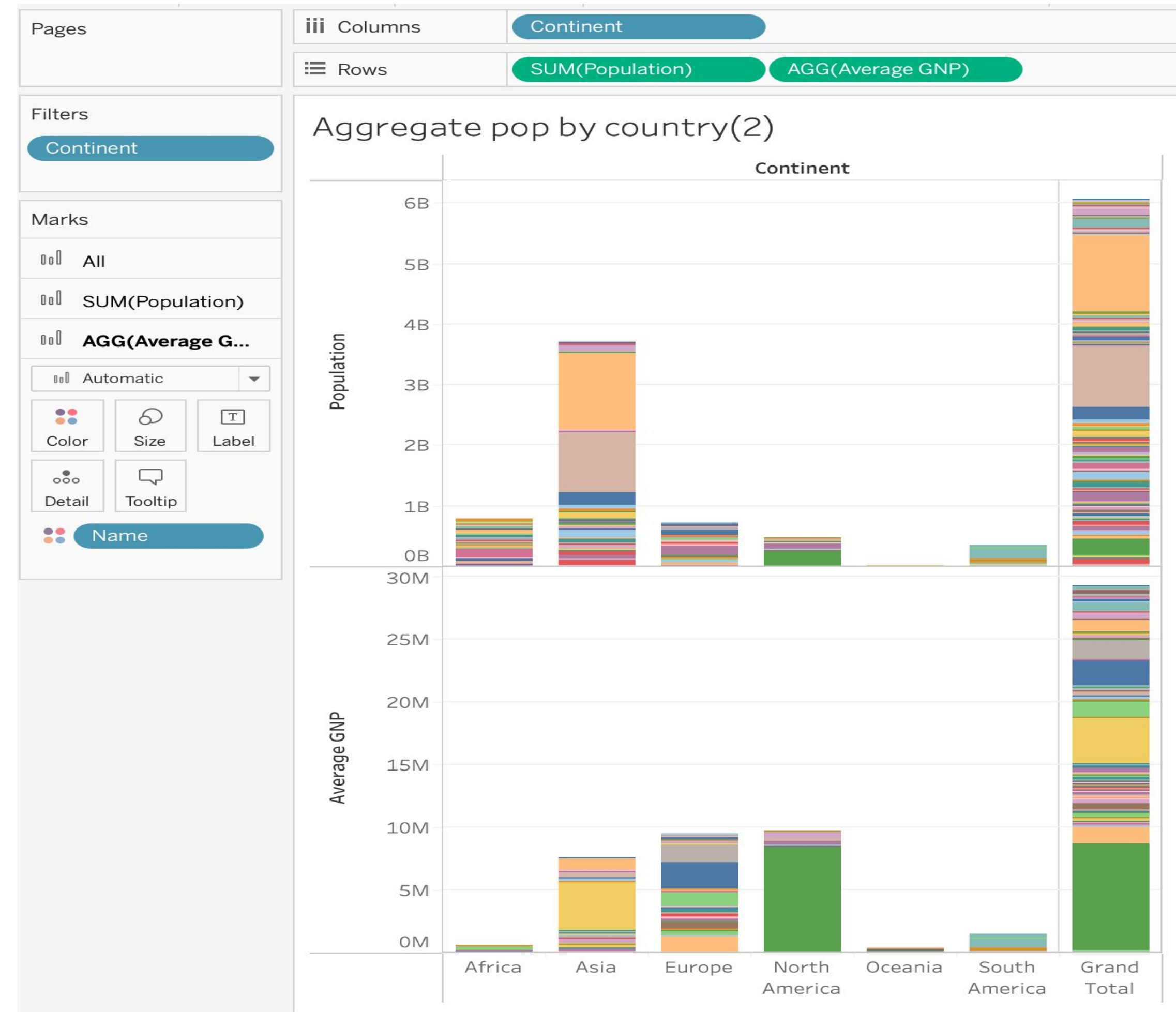
- We're going to calculate the **average GNP** grouped by country.
- Input the formula and note if calculation is “**valid**,” or properly formatted.
- A new column appears in the data pane with a “**=**” prefix, which tells us that the function is calculated.





# Modifying a visualization via function

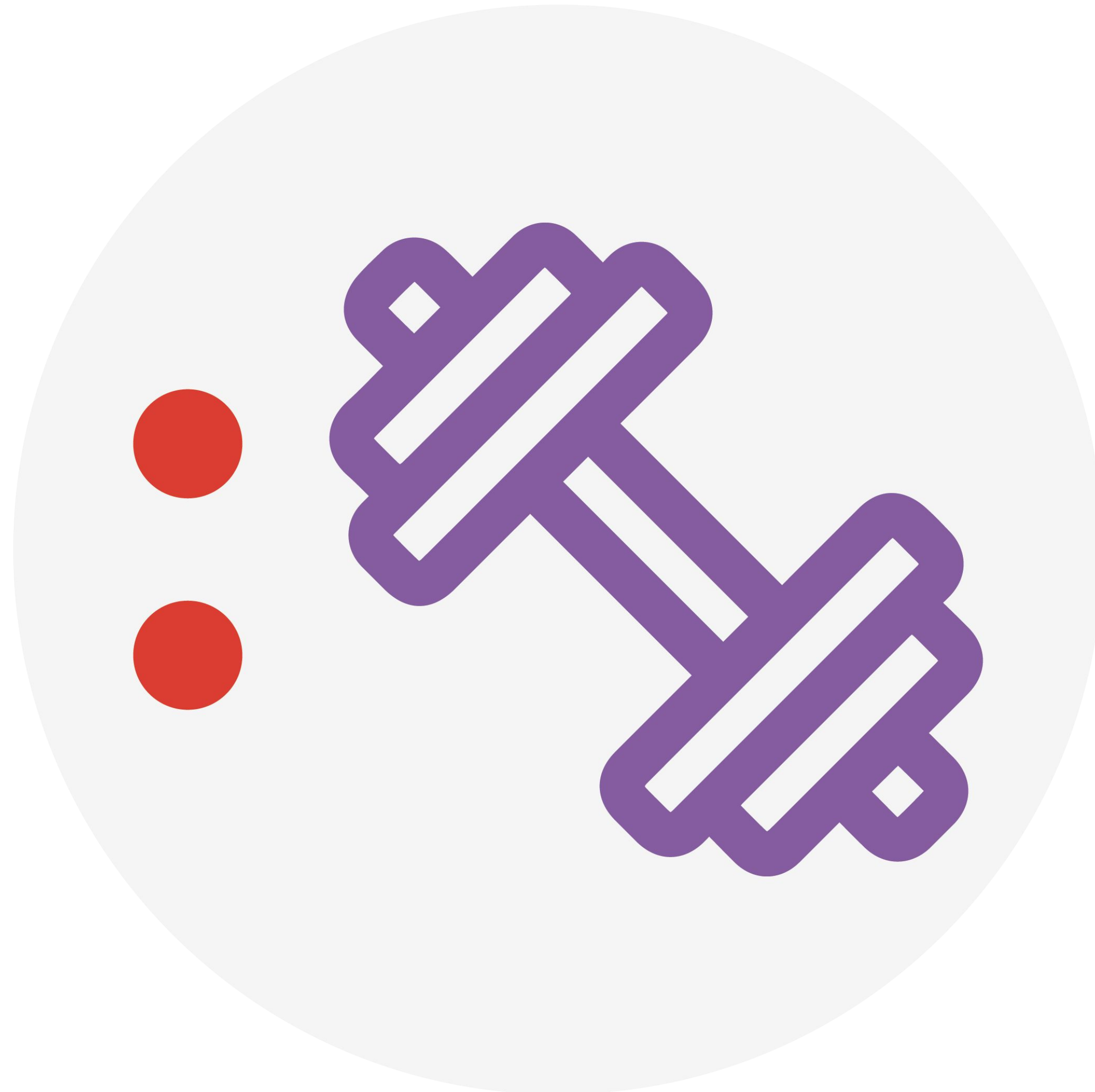
- Then, drag **average GNP** to the new field into our analysis shelf (notice it auto aggregates at the continent level!).
- Average GNP now appears as a separate pane within our visualization.



# Knowledge check 6



# Exercise 6



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# Preview: table calculations

- **Table calculations** give you calculations derived from the **view**, such as:
  - Rank
  - Percentile
  - Moving average
  - Difference
  - Running total
- These calculations do not consider any measures or dimensions that are filtered out of the visualization.
- Next time, we'll learn how to implement table calculations on our dataset.

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# What we covered today

In the past few modules, we covered:

- Formatting figures
  - Format menu
  - Right-clicking elements
  - Marks card
  - Annotations
- Tableau functions
  - Basic function syntax
  - Creating a function via shelf
  - Creating a function via menu
  - Implementing a function
- Introduction to table calculations

# Next steps

In the next few modules, we will cover:

- Functions
  - Table calculations
  - Level of detail (LOD) functions
  - Number functions
  - Aggregate calculations

Until then, stay excited!



# ● End of Part 6

