香港城市大學
City University of Hong Kong
Innovating into the Future

SDSC 5002 – Tutorial 5

Further Visualization using Tableau

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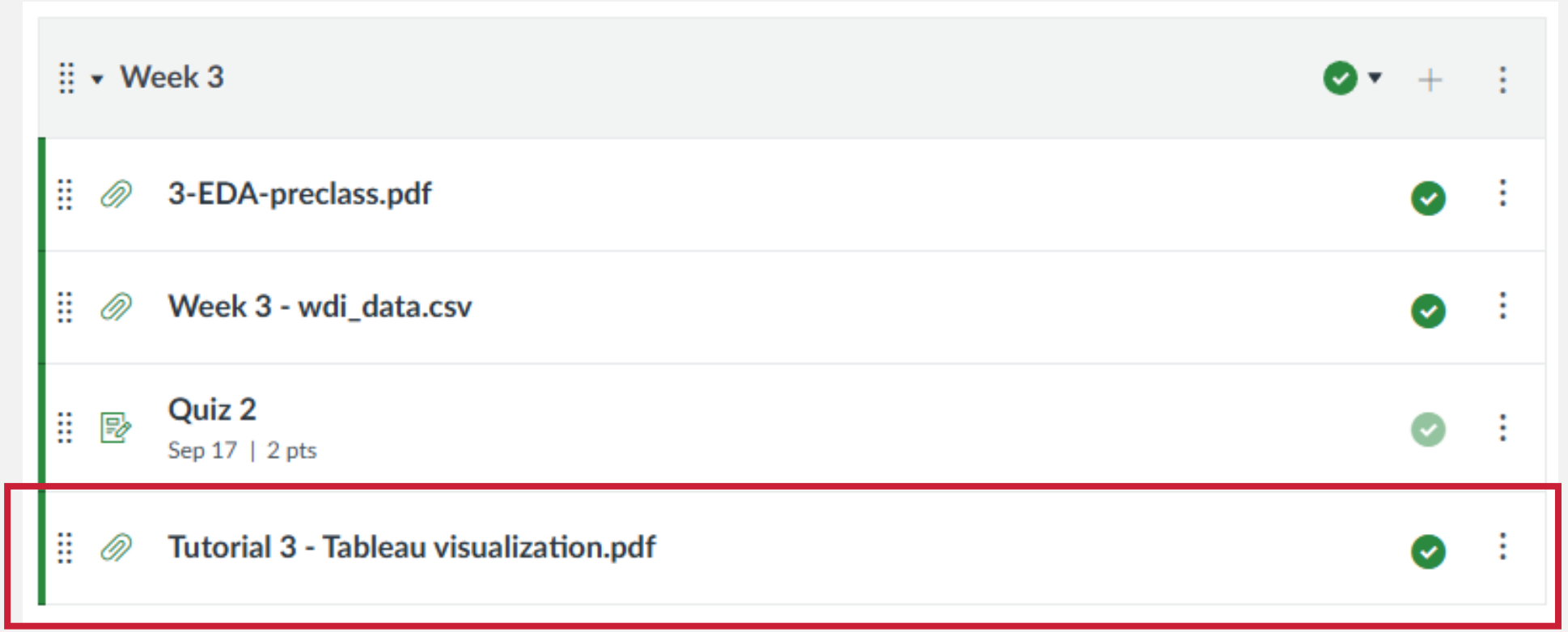
2025/10/15

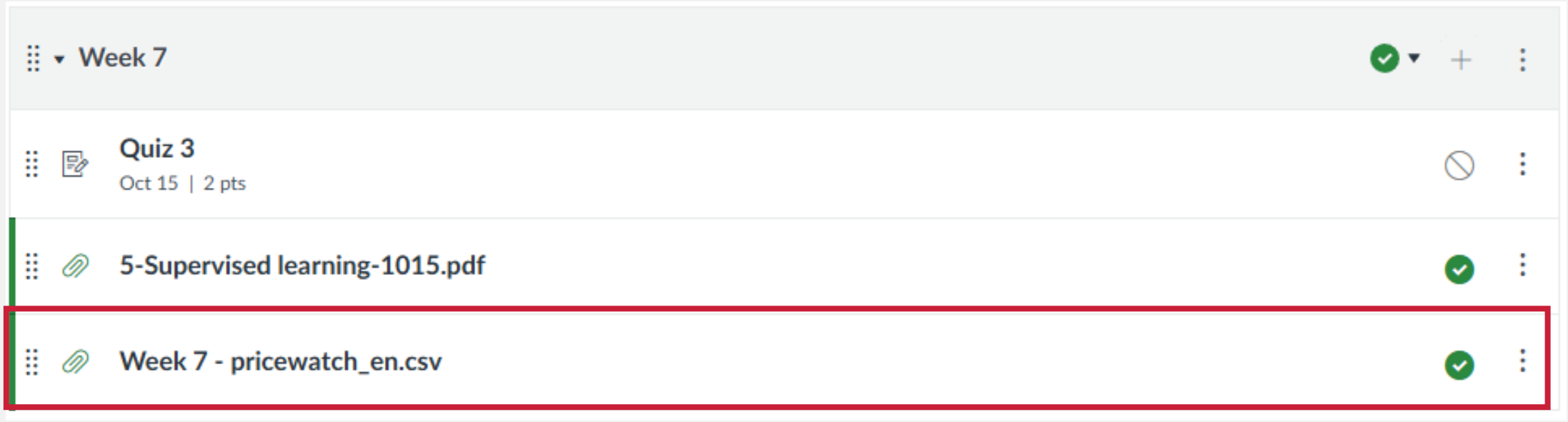
Pre-tutorial

- Learn basic Tableau conceptions (data types, file type, etc.)
- Use Tableau to draw worksheets with WDI data



Learning Objectives

- Use Tableau to draw different worksheets according to questions
- Other relevant functions in Tableau



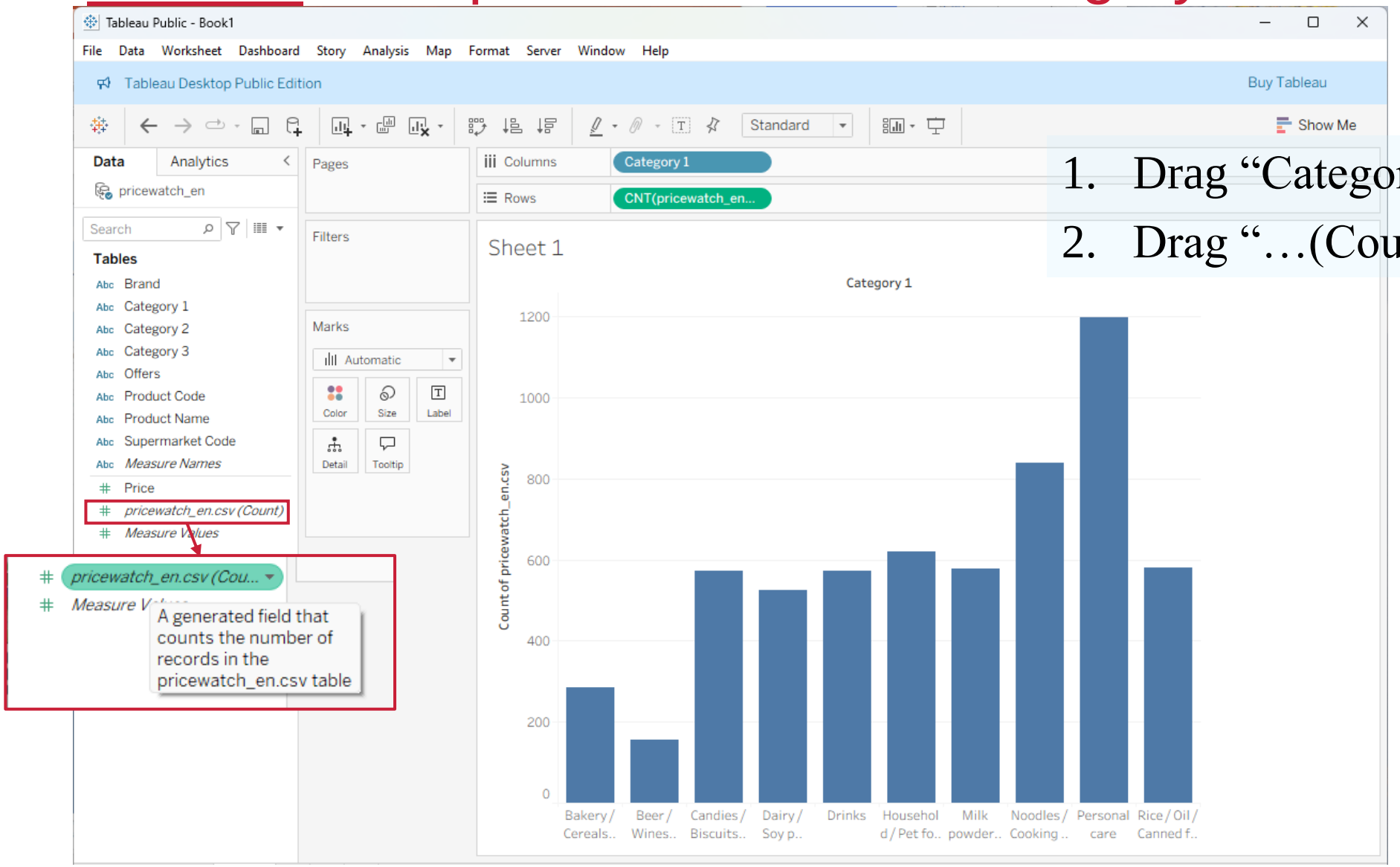
Bar Chart

Given: Online Price Watch data (file name: pricewatch_en.csv)

Tasks:

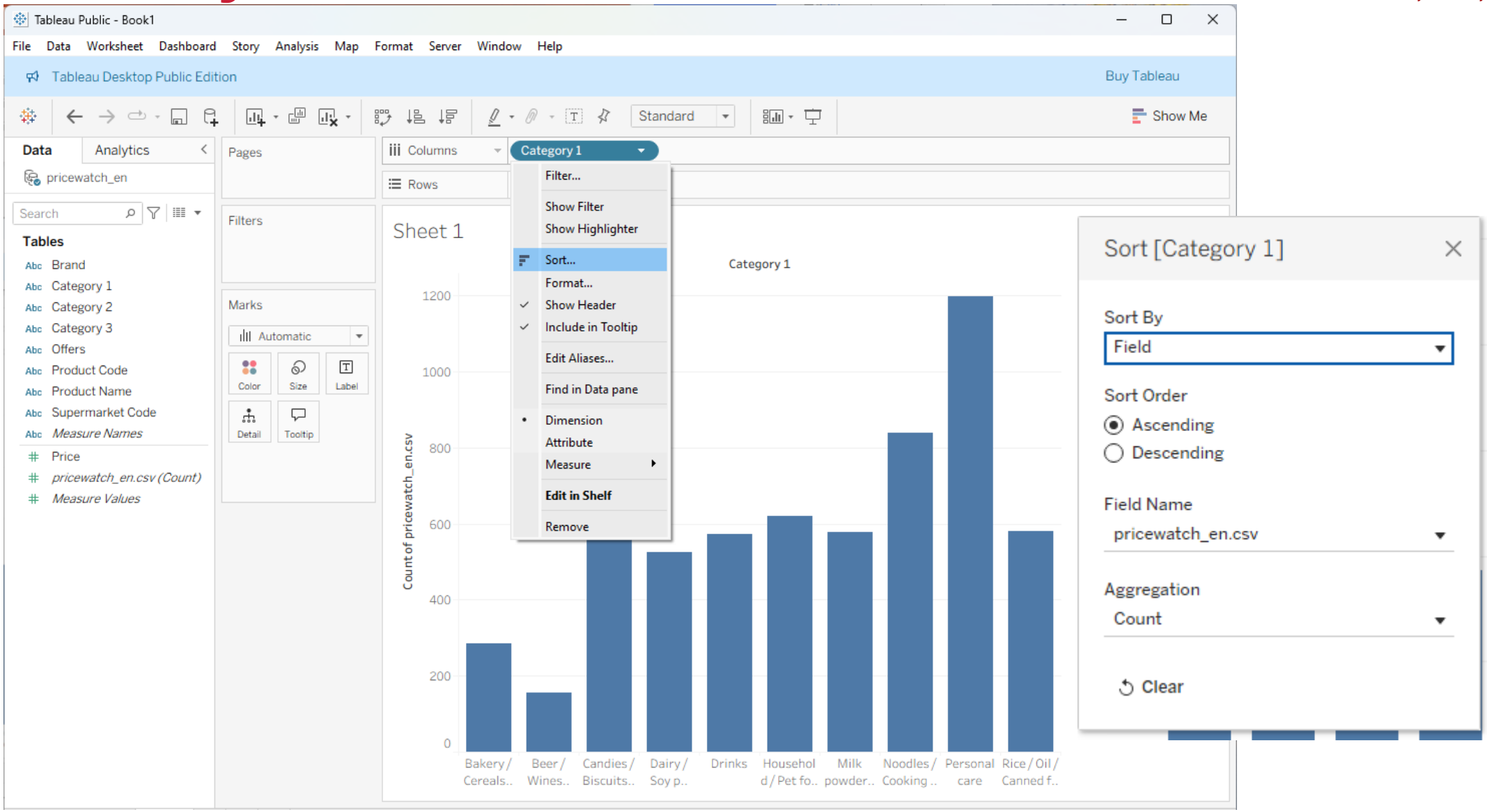
1. The quantities of each category.
2. The prices of each category.
3. The quantities of each category in each supermarket.

Task 1: The quantities of each category.

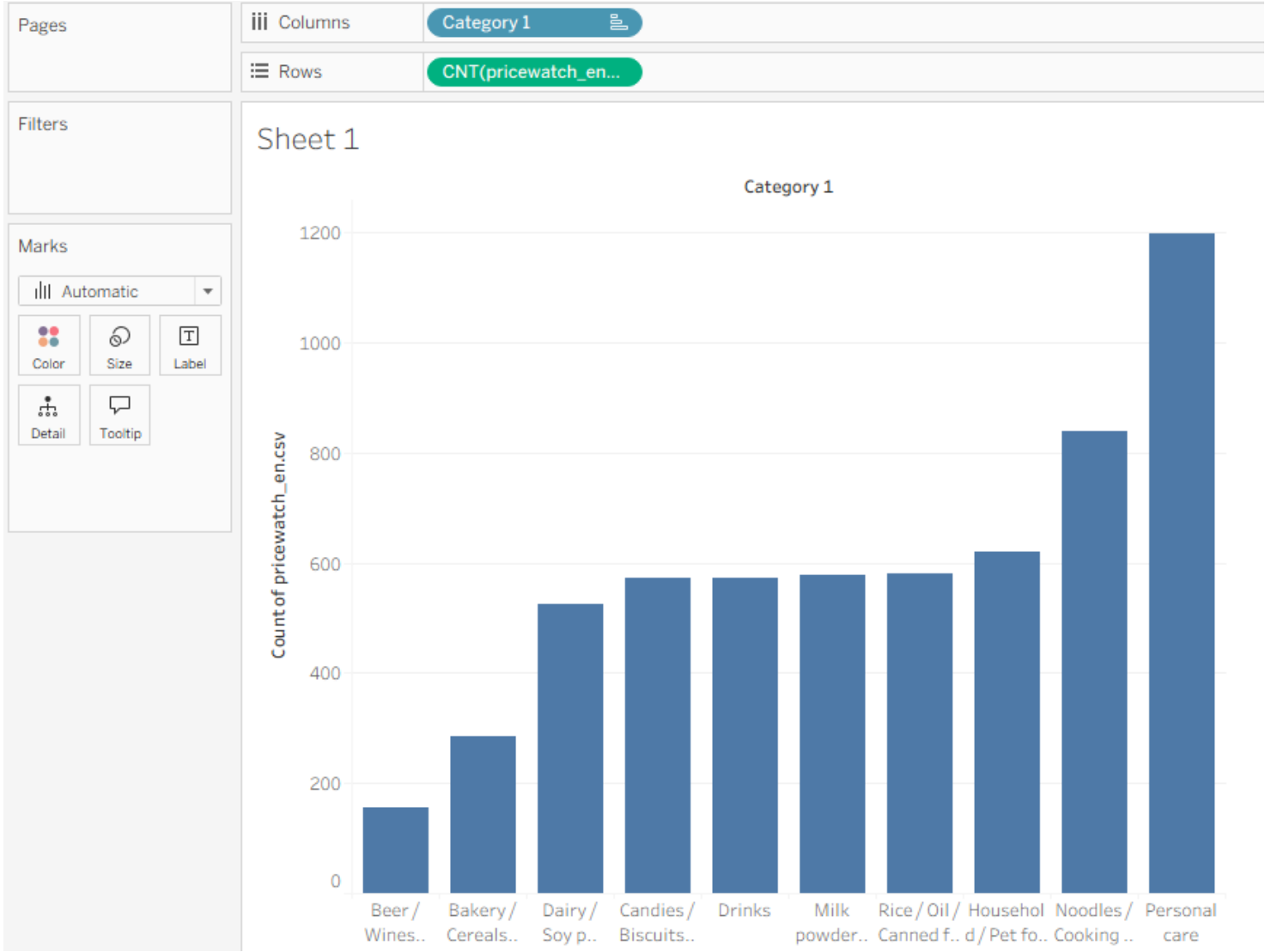


1. Drag “Category 1” on Columns
2. Drag “…(Count)” to Rows

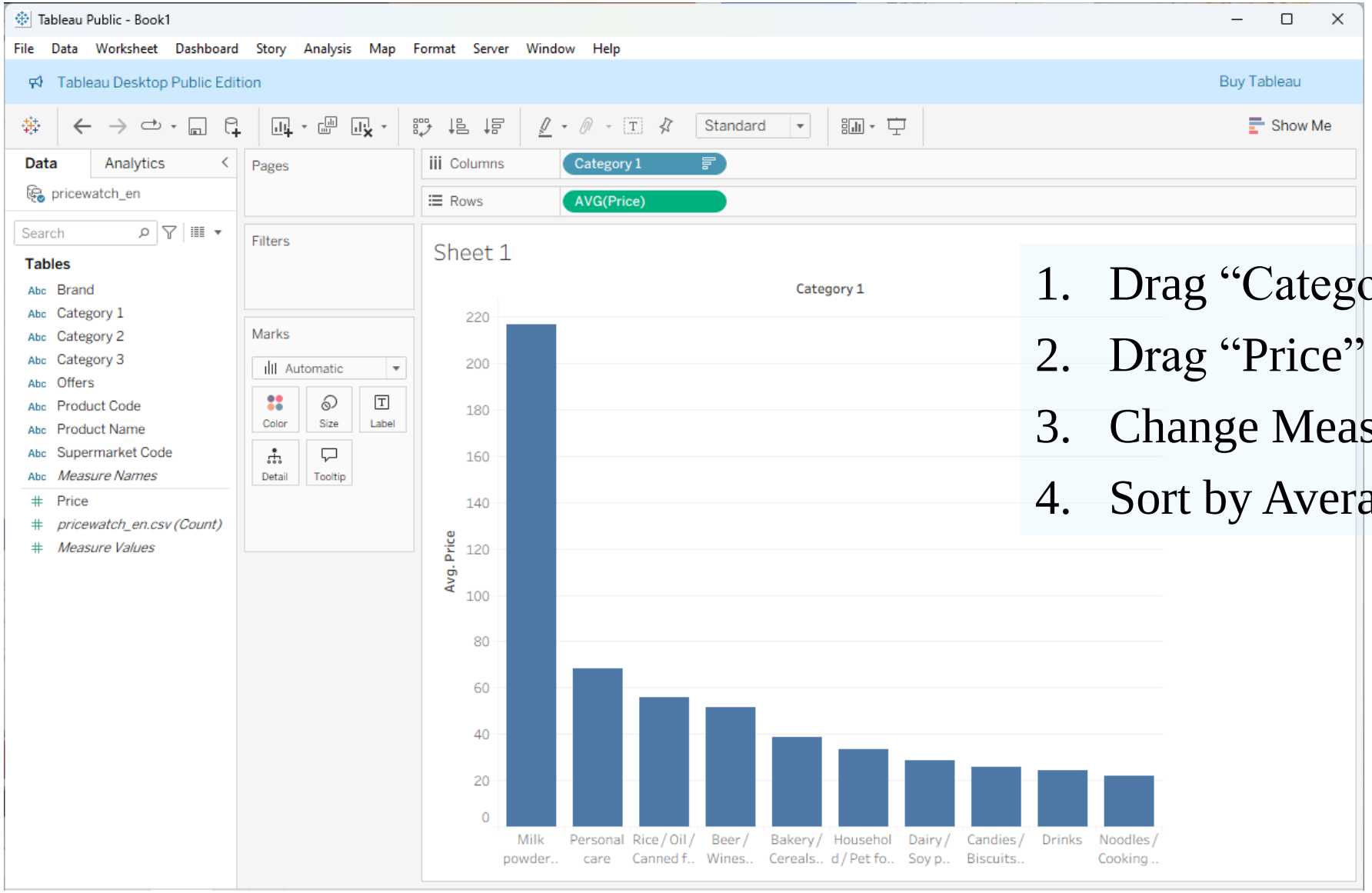
Sort By Field



Task 1: The quantities of each category.

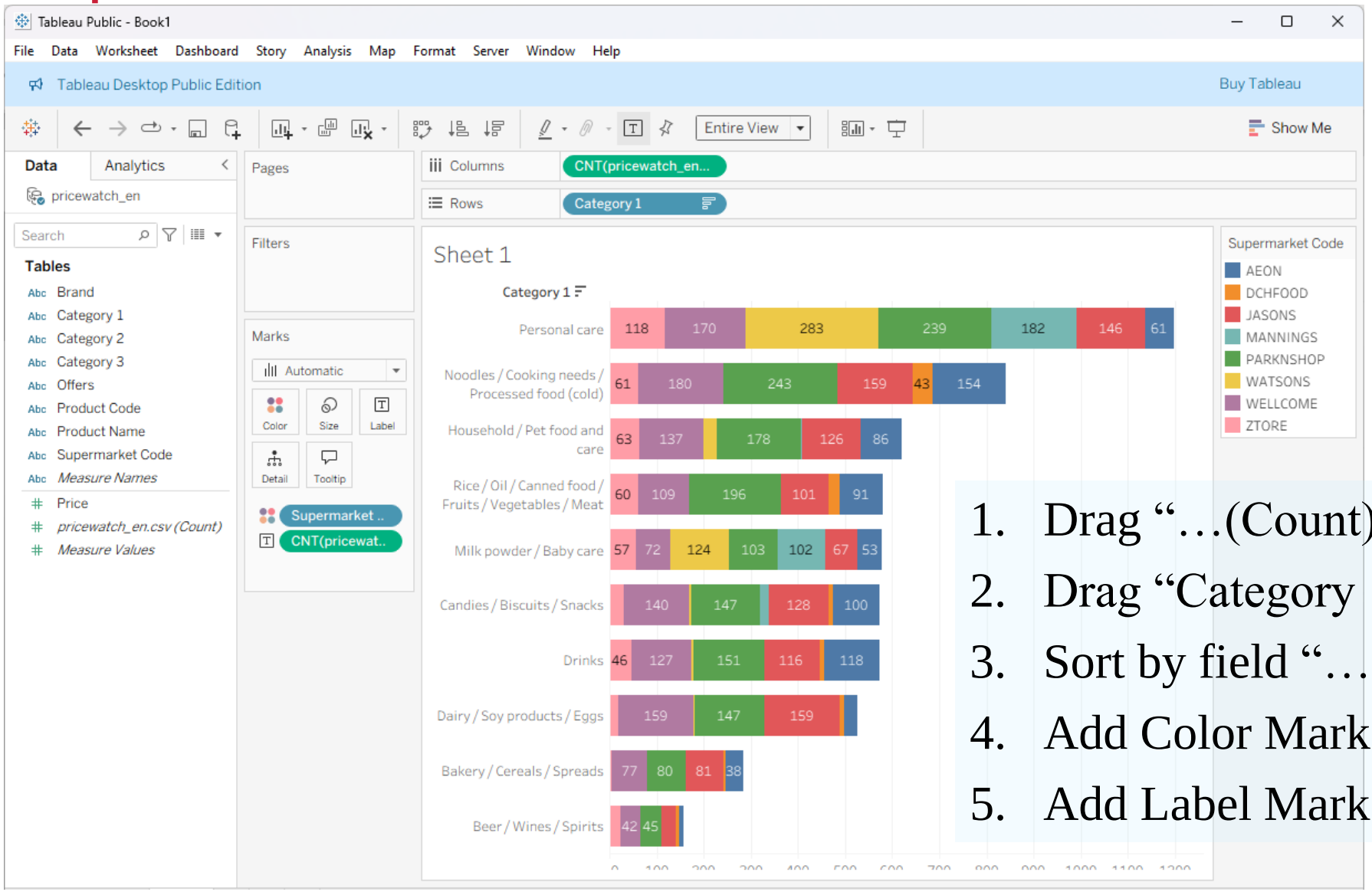


Task 2: The prices of each category.



1. Drag “Category 1” on Columns
2. Drag “Price” to Rows
3. Change Measure to Average
4. Sort by Average Price

Task 3: The quantities of each category in each supermarket.



1. Drag "…(Count)" to Columns
2. Drag "Category 1" to Rows
3. Sort by field "…(Count)"
4. Add Color Marks by Supermarket
5. Add Label Marks

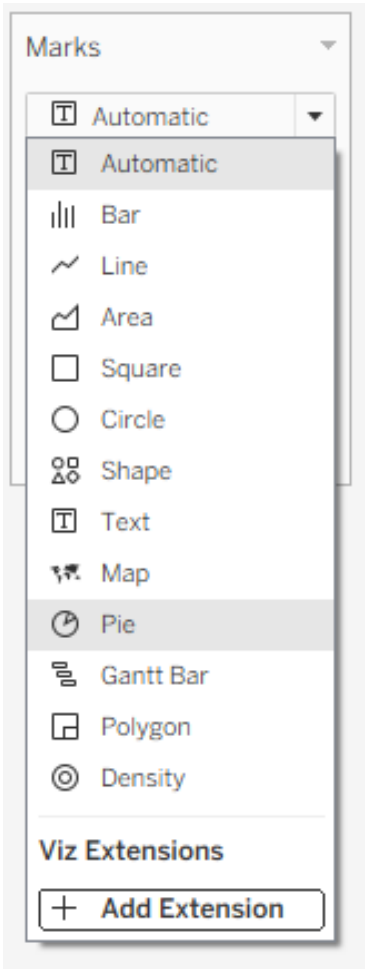
Pie Chart

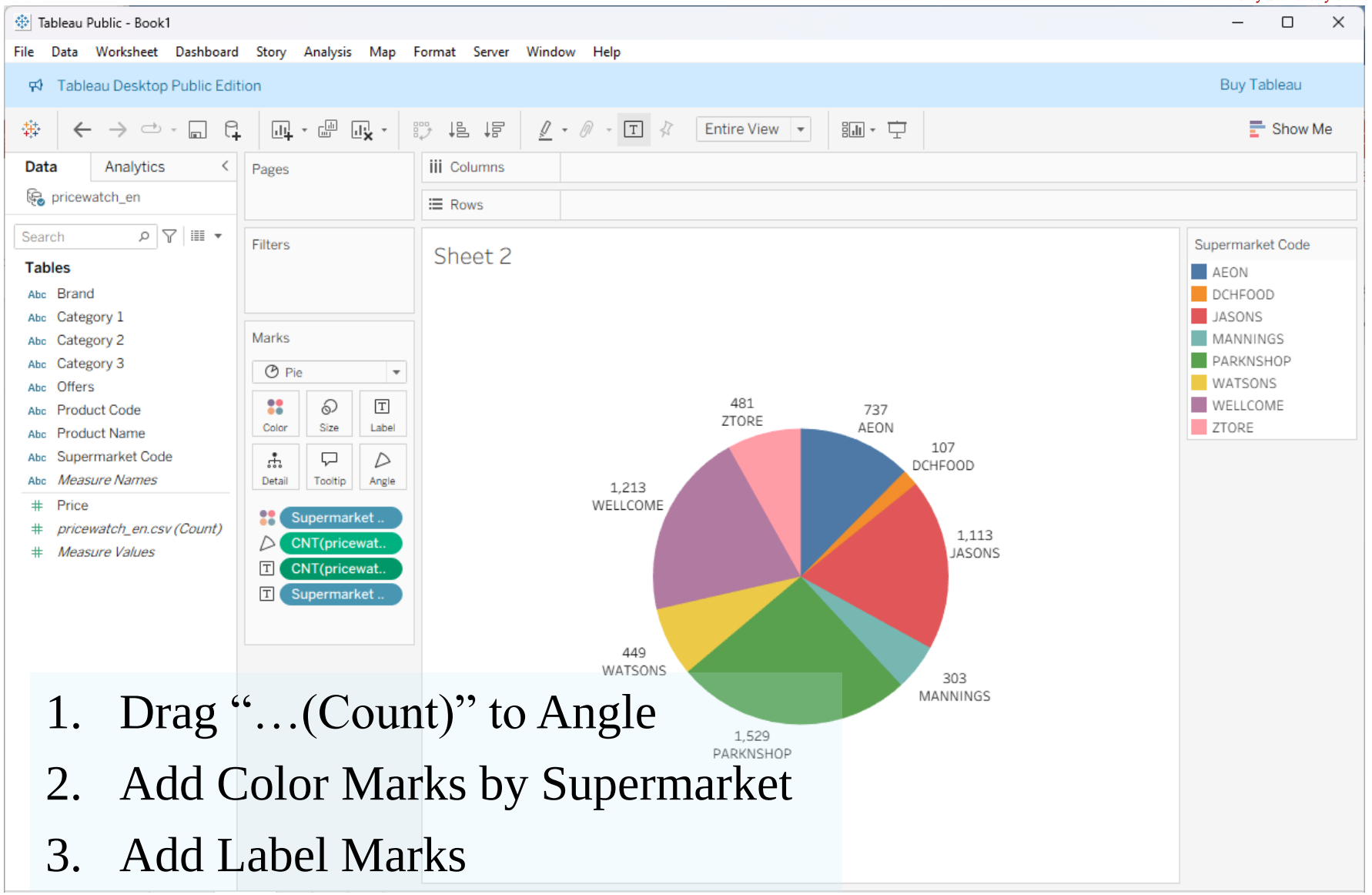
Given: Online Price Watch

Tasks:

- The proportion of goods categories in various supermarkets.

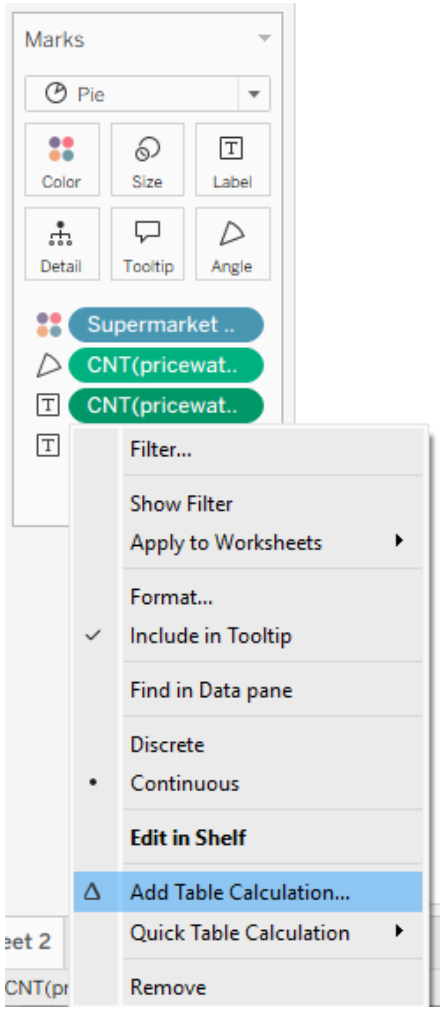
Task: The proportion of goods categories in various supermarkets.

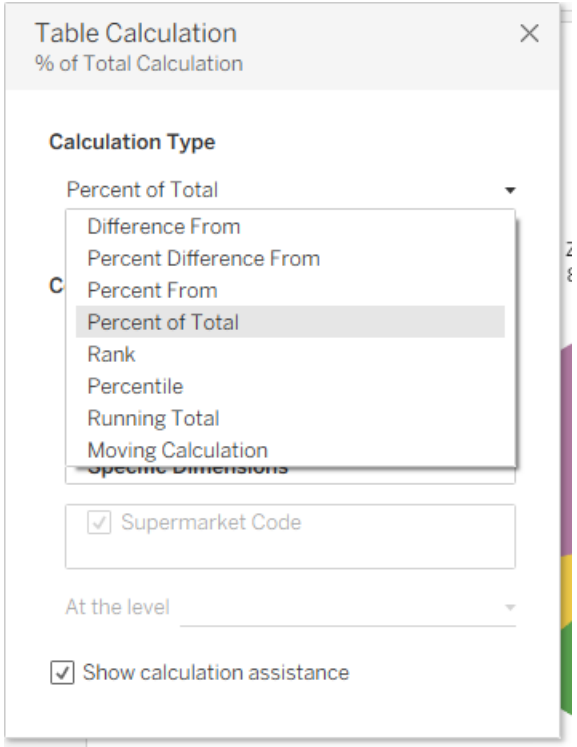


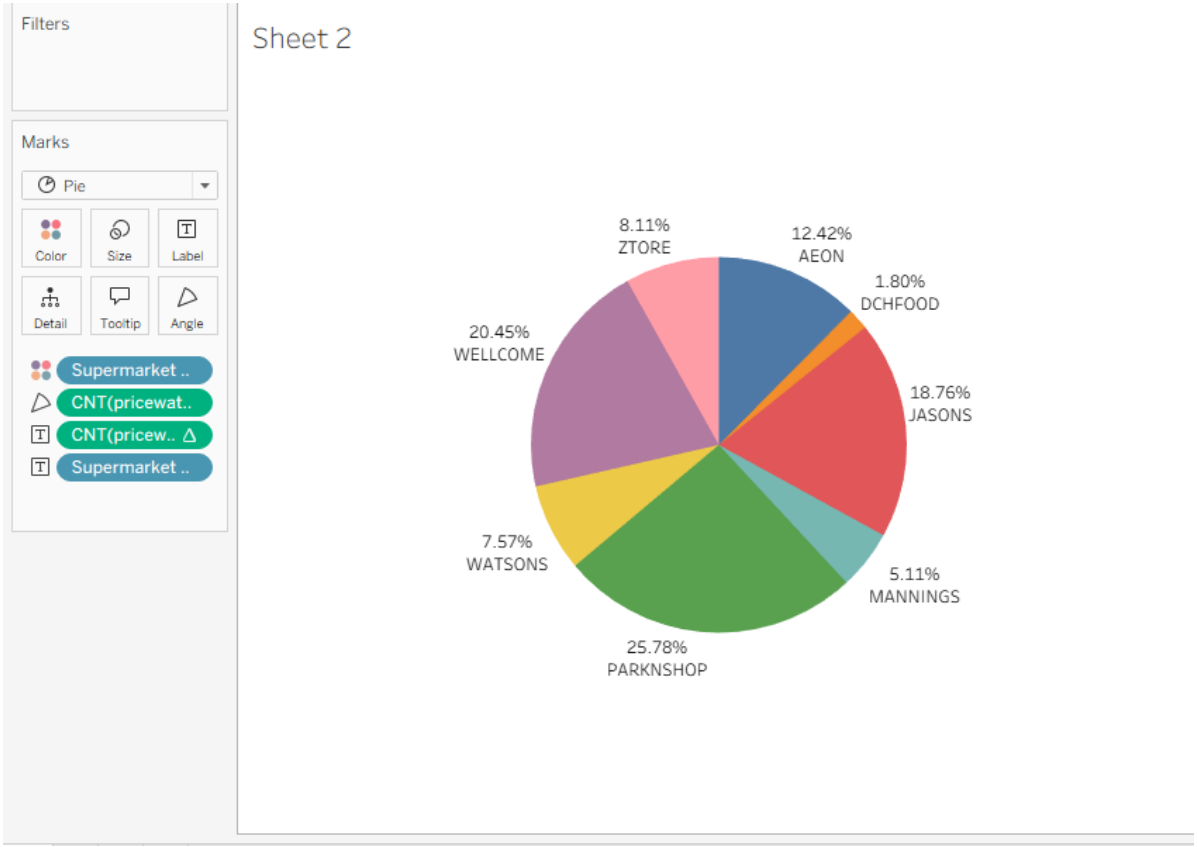


1. Drag "…(Count)" to Angle
2. Add Color Marks by Supermarket
3. Add Label Marks

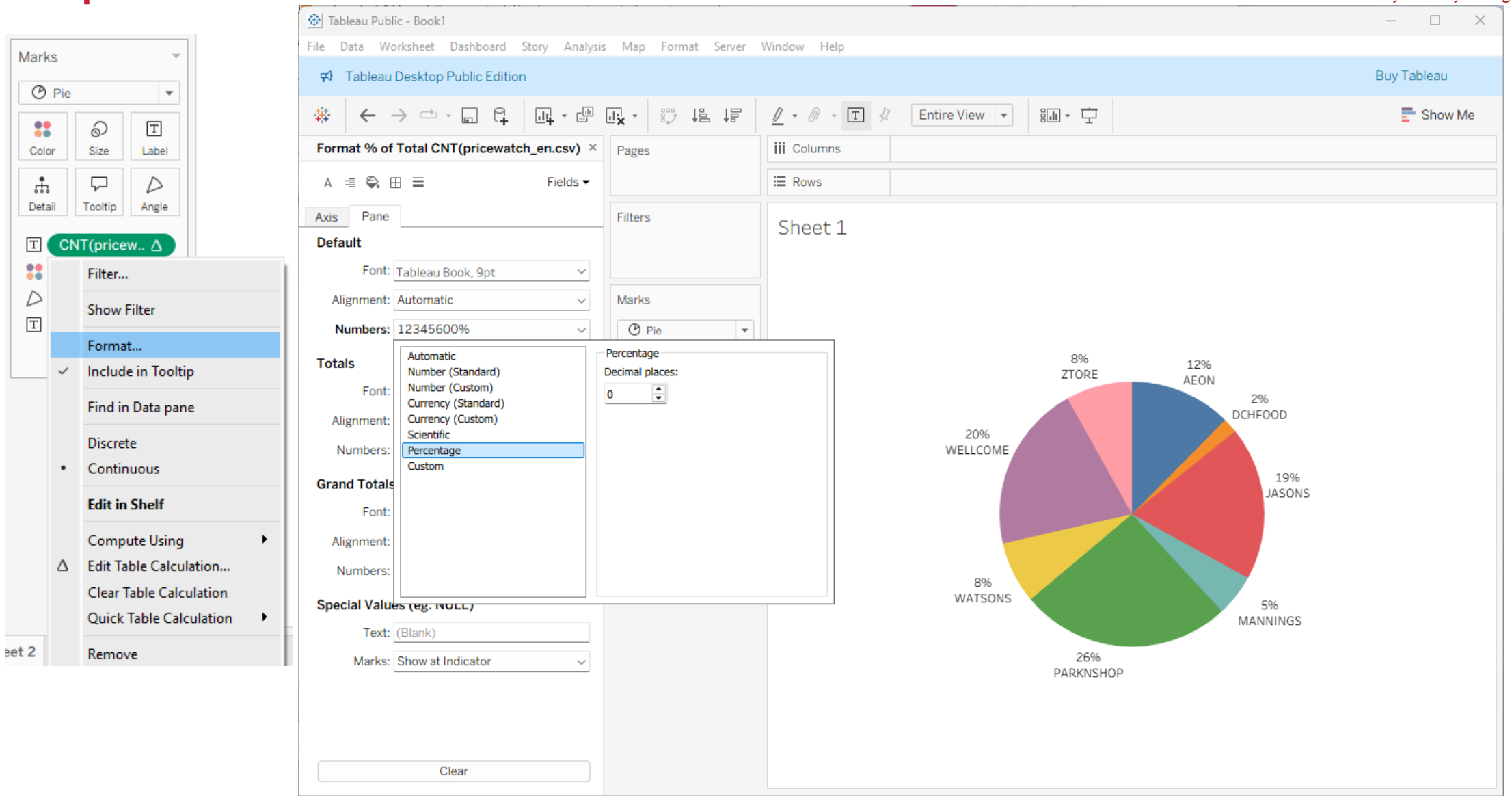
Task: The proportion of goods categories in various supermarkets.



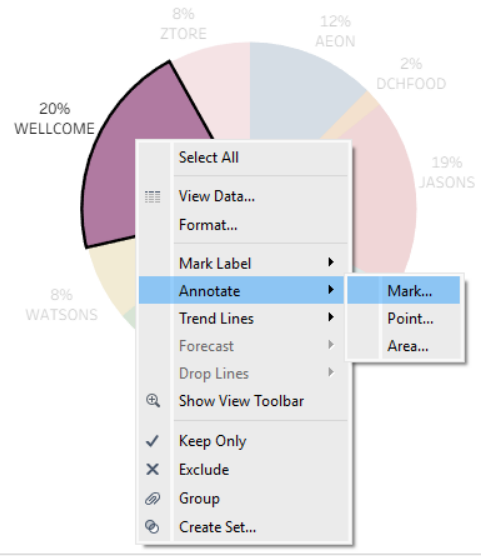


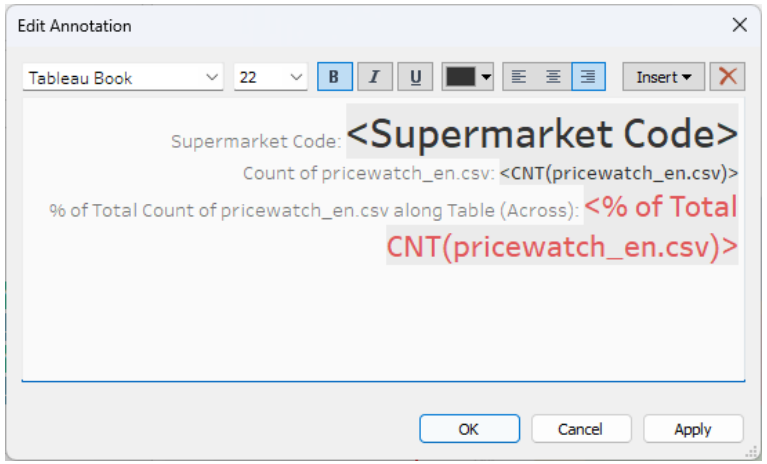


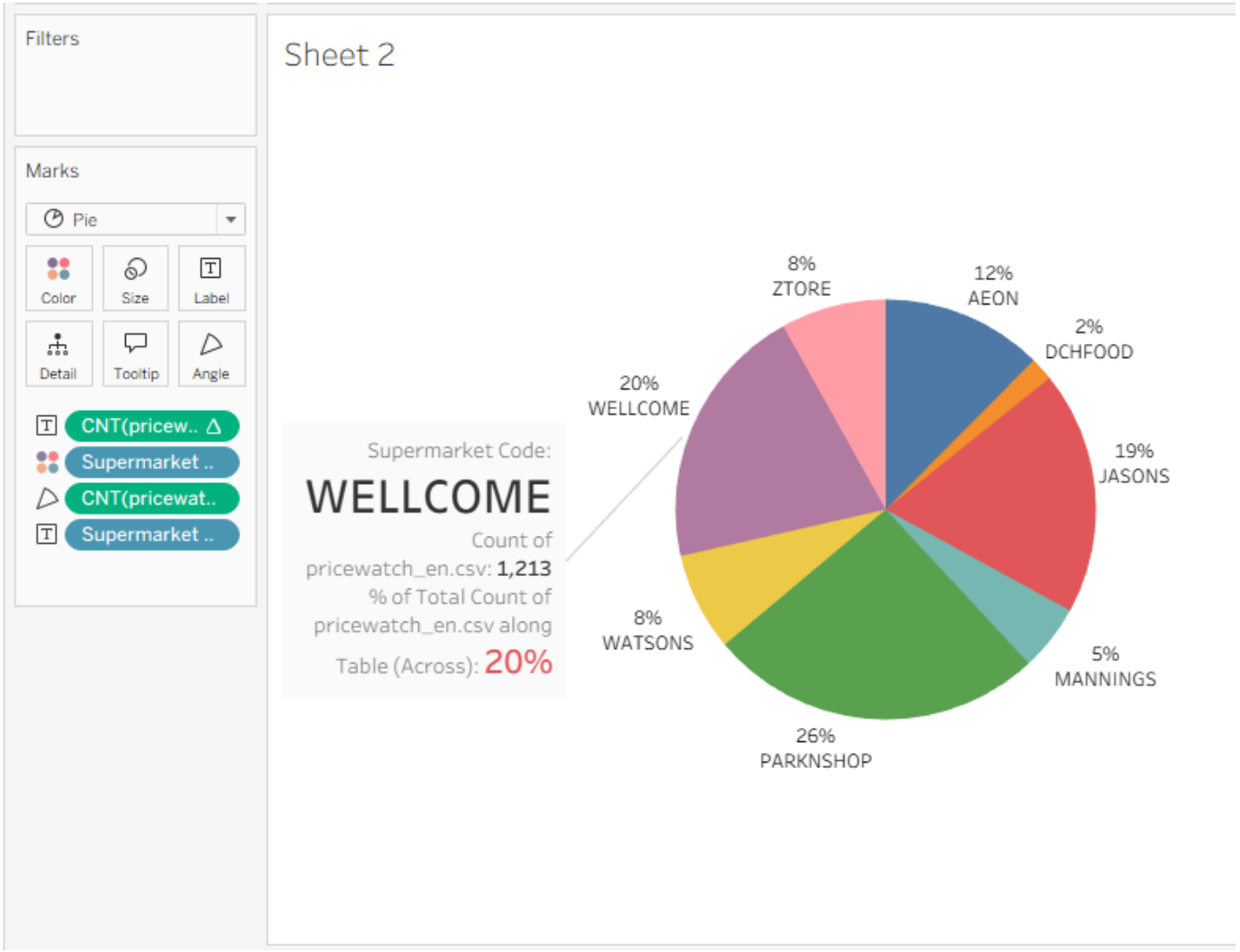
Task: The proportion of goods categories in various supermarkets.



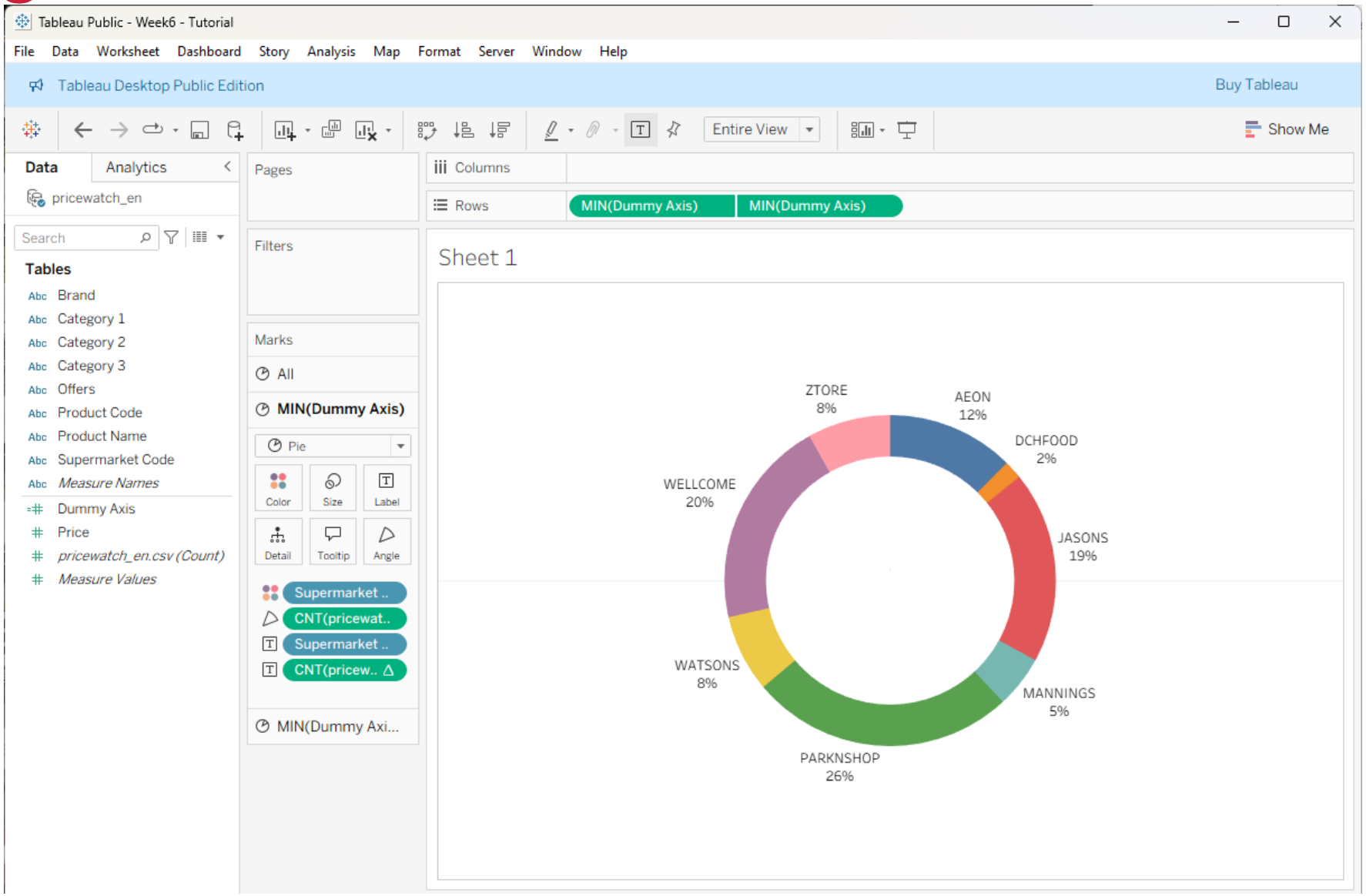
Task: The proportion of goods categories in various supermarkets.





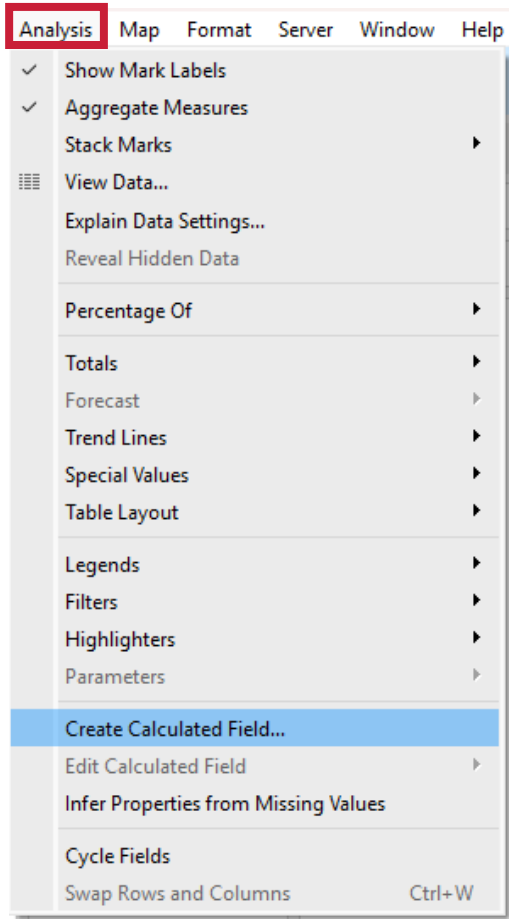


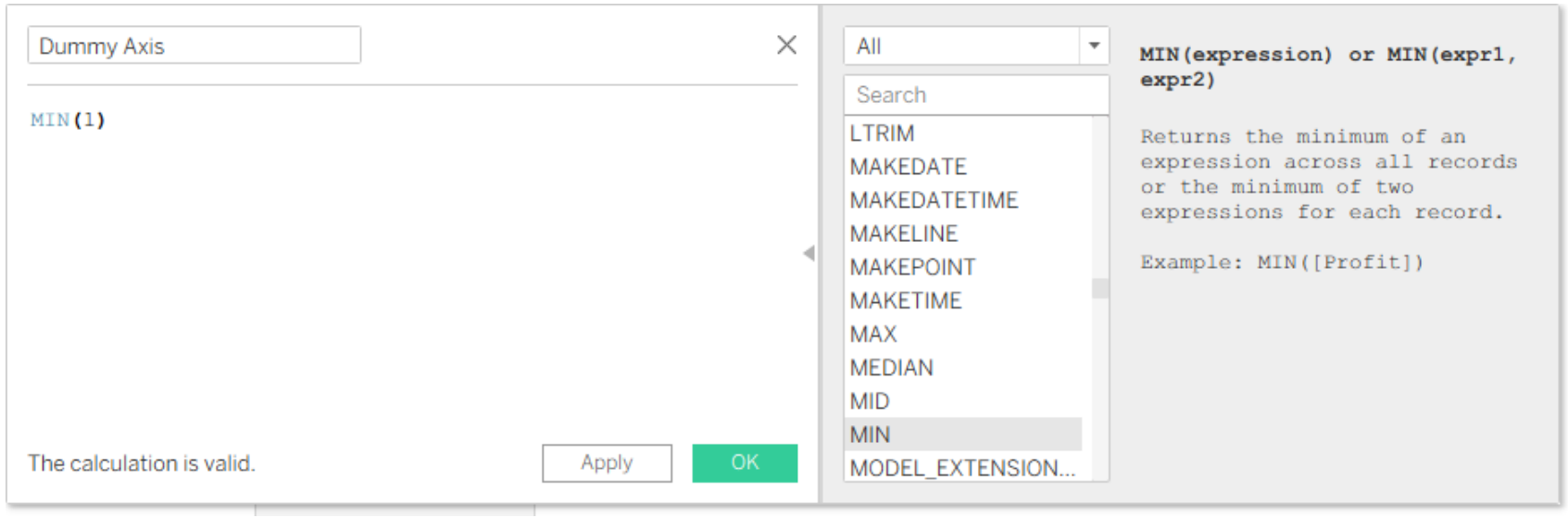
Doughnut Charts



Use two pie charts to create doughnut chart

- **Create Calculated Field to generate the dual-axis pie chart**

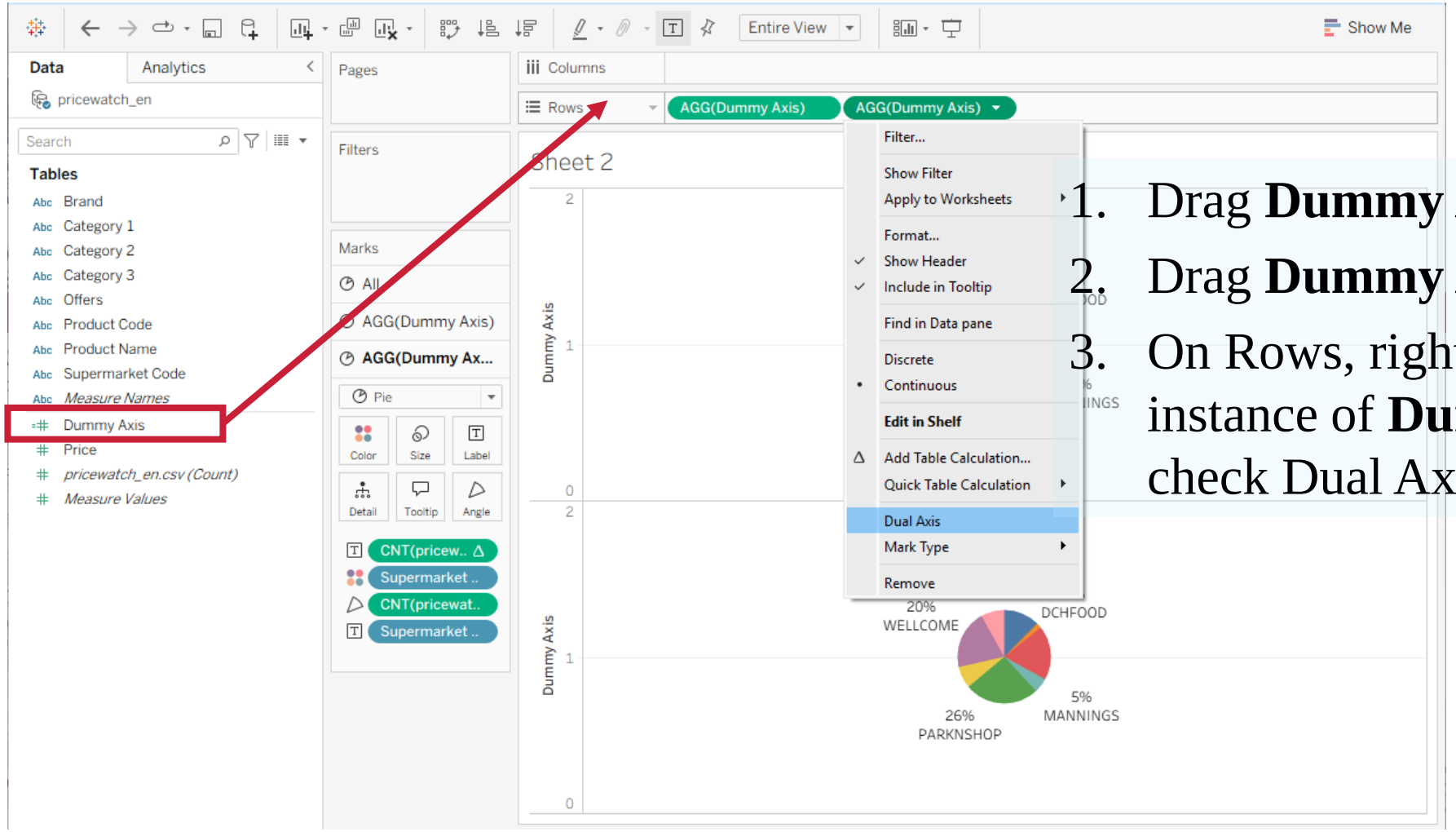




1. Select Analysis > **Create Calculated Field.**
2. In the Calculated Field dialog box :
   a. Name the calculated field, e.g. "**Dummy Axis**"
   b. In the formula field, enter the formula: **MIN(1)**

Use two pie charts to create doughnut chart

- **Create Calculated Field to generate the dual-axis pie chart**

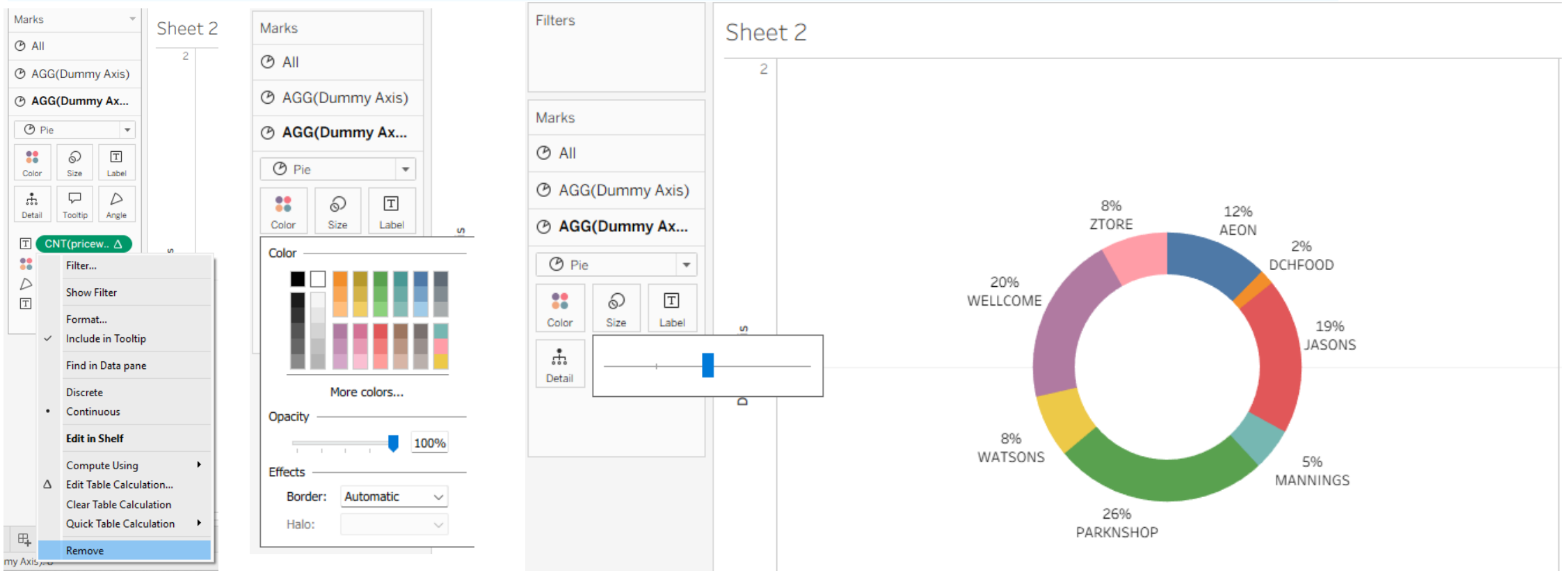


1. Drag **Dummy Axis** to Rows.
2. Drag **Dummy Axis** to Rows **again**.
3. On Rows, right-click the second instance of **Dummy Axis**, and then check Dual Axis.

Use two pie charts to create doughnut chart

- **Change the second pie chart to a circle**

1. At the bottom of the Marks card, click AGG(Dummy Axis) (2). Remove items under marks.
2. Click Color, and then choose the same color as the background.
3. Click Size, and then drag the slider to the left to make the circle smaller.



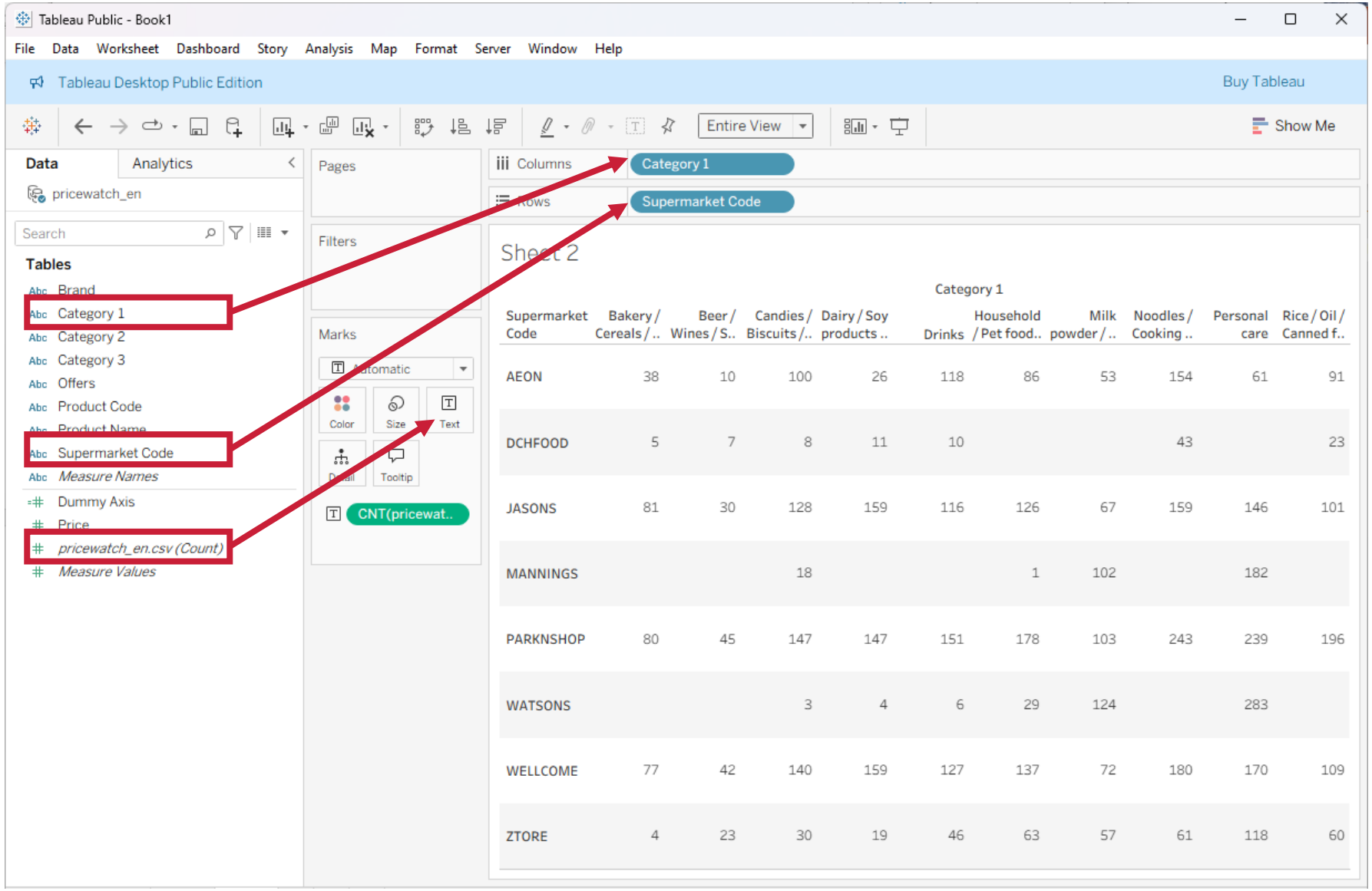
Table

Given: Online Price Watch

Task:

1. Basic table to show quantities of each category in each supermarket.
2. Highlight table

Basic table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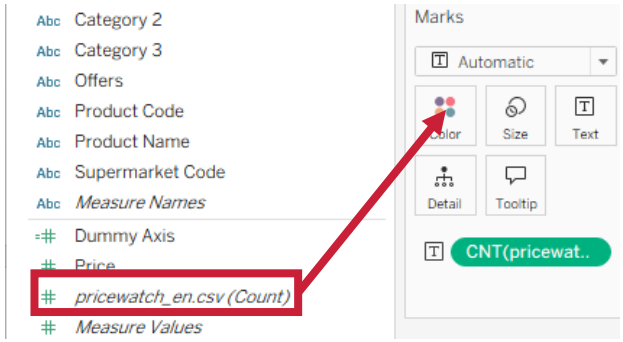
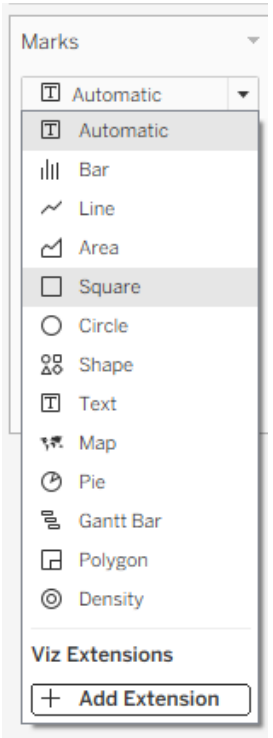
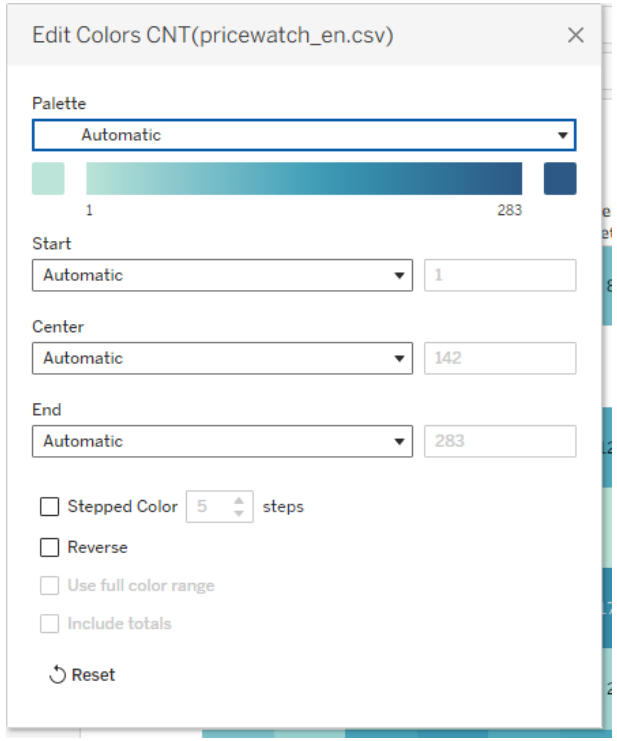
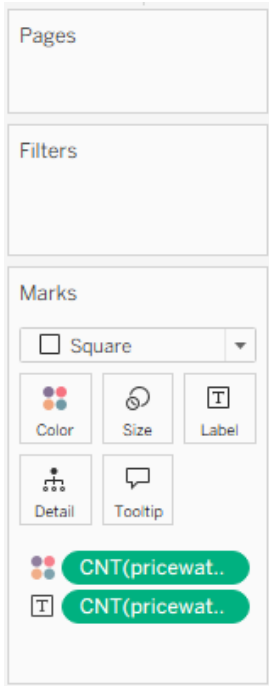
Data
Analytics
pricewatch_en
Search
Tables
Abc Brand
Abc Category 1
Abc Category 2
Abc Category 3
Abc Offers
Abc Product Code
Abc Supermarket Code
Abc Measure Names
Dummy Axis
Price
pricewatch_en.csv (Count)
Measure Values
Pages
Filters
Marks
Automatic
Color
Size
Text
Tooltip
CNT(pricewat..
Columns
Category 1
Rows
Supermarket Code
Sheet 2
Category 1
Supermarket Code
Bakery / Cereals / ..
Beer / Wines / S..
Candies / Biscuits /..
Dairy / Soy products ..
Drinks
Household / Pet food..
Milk powder / ..
Noodles / Cooking ..
Personal care
Rice / Oil / Canned f..
AEON 38 10 100 26 118 86 53 154 61 91
DCHFOOD 5 7 8 11 10 43 23
JASONS 81 30 128 159 116 126 67 159 146 101
MANNINGS 18 1 102 182
PARKNSHOP 80 45 147 147 151 178 103 243 239 196
WATSONS 3 4 6 29 124 283
WELLCOME 77 42 140 159 127 137 72 180 170 109
ZTORE 4 23 30 19 46 63 57 61 118 60

Highlight table









Supermarket Code	Bakery / Cereals ..	Beer / Wines /..	Candies / Biscuit..	Dairy / Soy pro..	Drinks	Household / Pet ..	Milk powder..	Noodles / Cooki..	Personal care	Rice / Oil / Canne..
AEON	38	10	100	26	118	86	53	154	61	91
DCHFOOD	5	7	8	11	10			43		23
JASONS	81	30	128	159	116	126	67	159	146	101
MANNINGS			18			1	102		182	
PARKNSHOP	80	45	147	147	151	178	103	243	239	196
WATSONS			3	4	6	29	124		283	
WELLCOME	77	42	140	159	127	137	72	180	170	109
ZTORE	4	23	30	19	46	63	57	61	118	60

Other Charts

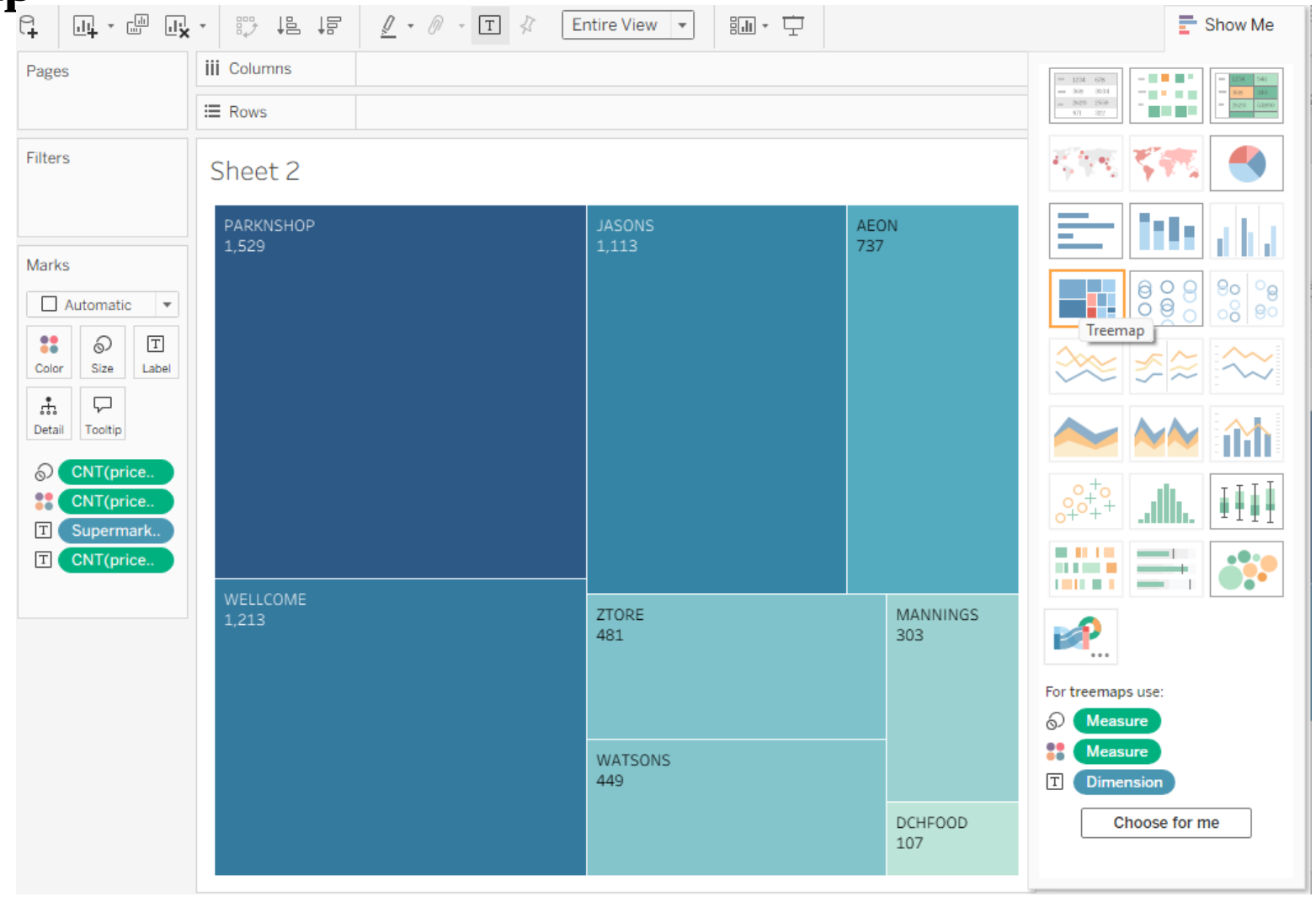
Given: Online Price Watch

Task:

- Quantity of goods in different supermarkets.

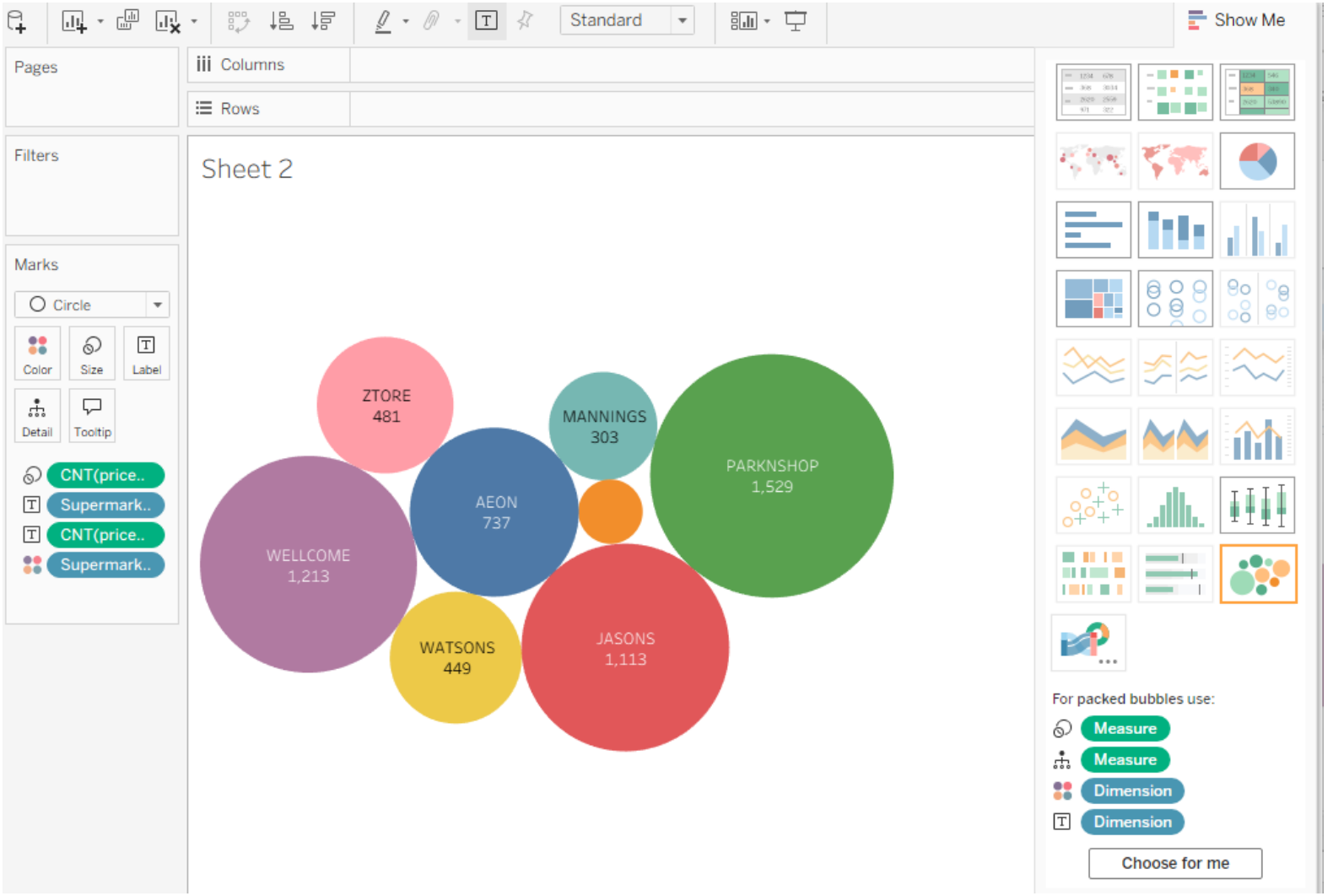
Task: Quantity of goods in different supermarkets.

- **Treemap**



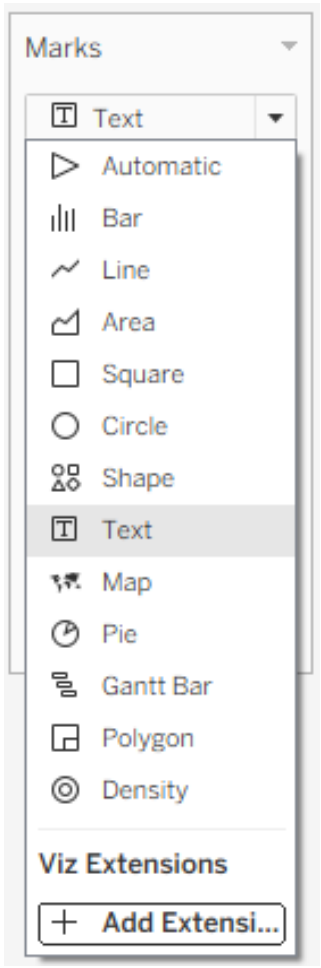
Task: Quantity of goods in different supermarkets.

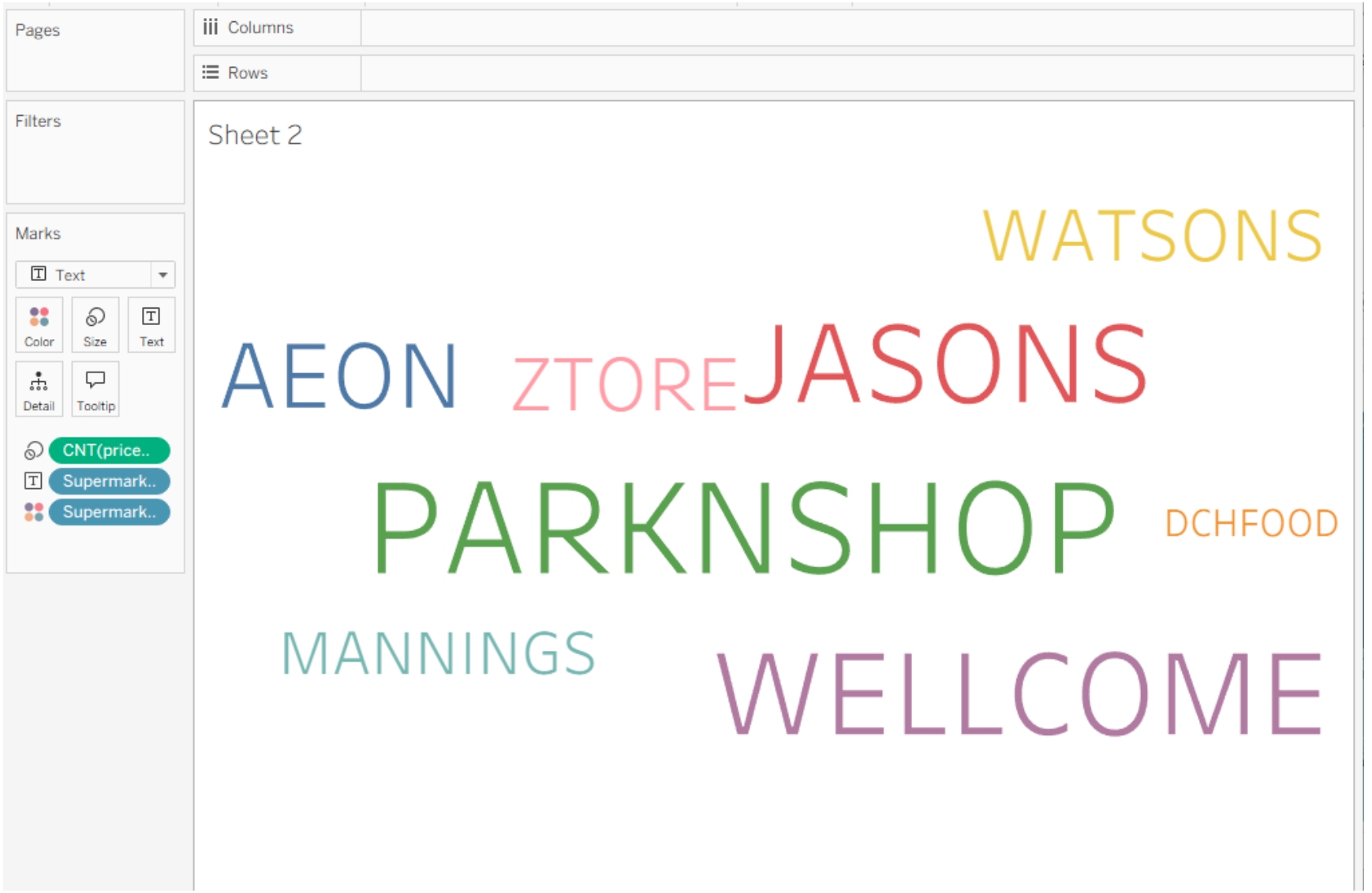
- **Packed Bubble Chart**



Task: Quantity of goods in different supermarkets.

- **Word Cloud**



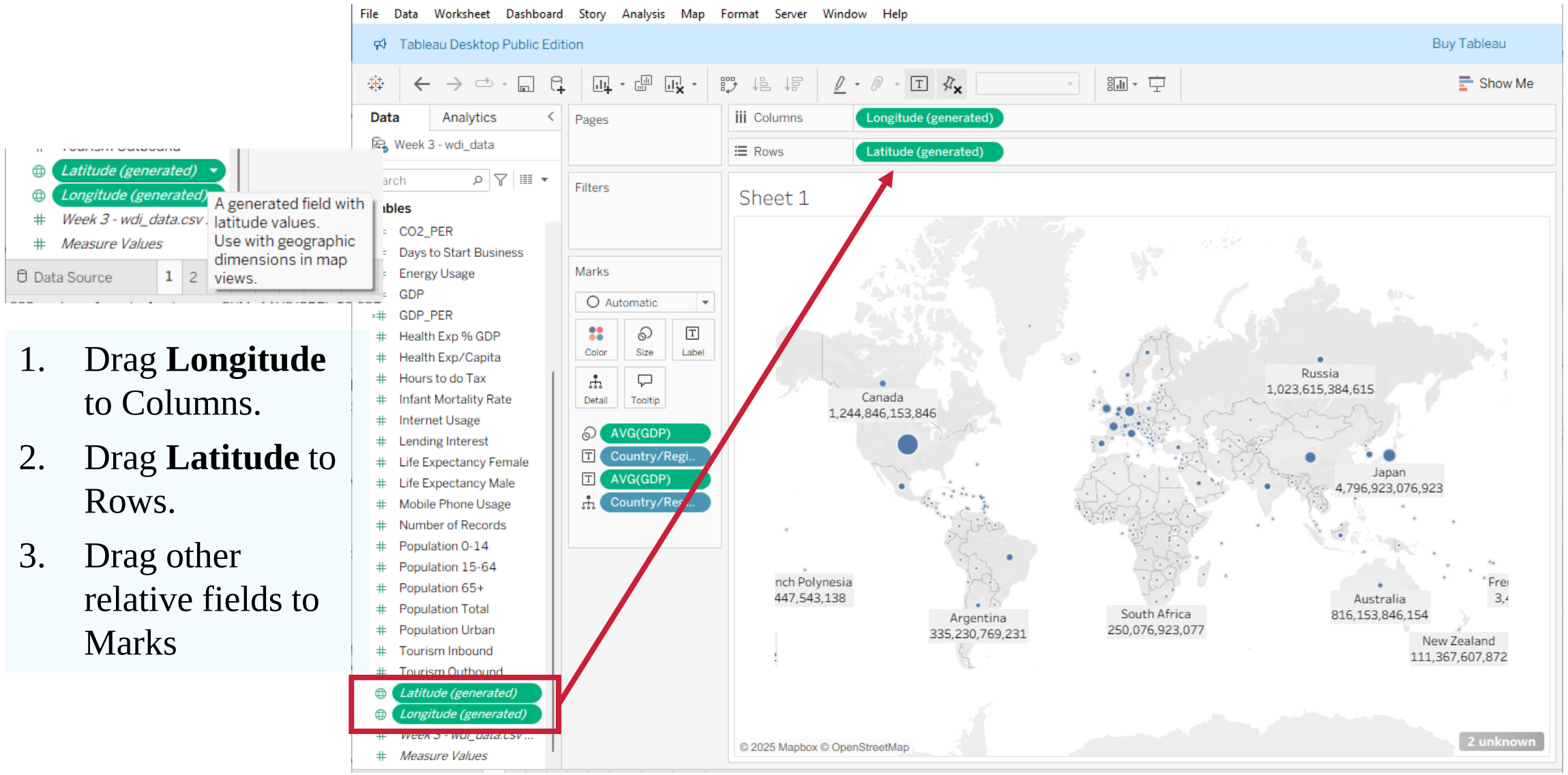


Map

Given: Wdi.csv

Task:
GDP and CO2 Emissions of Various Countries and Regions
Per capita GDP in different regions

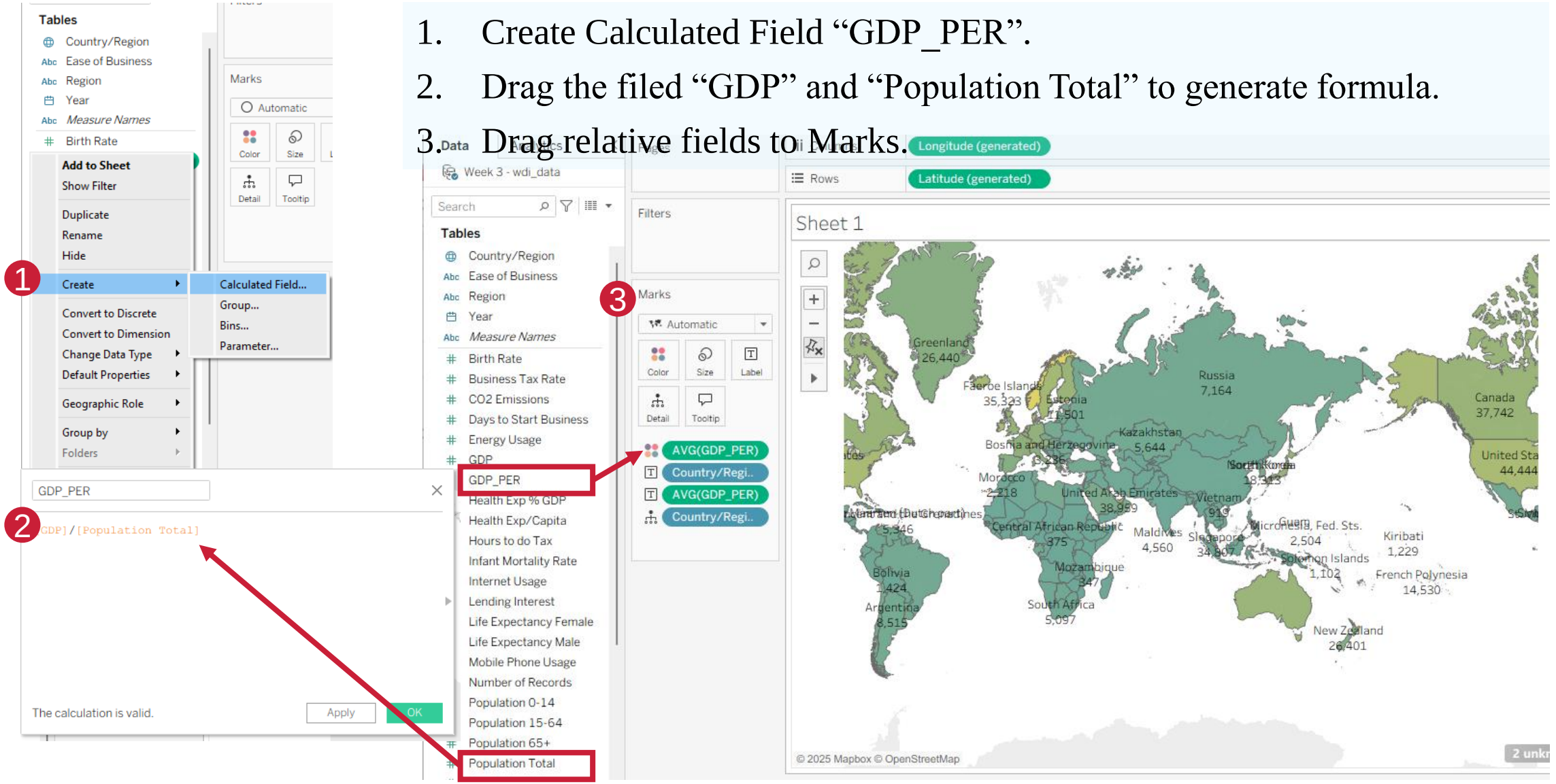
Task: GDP of Various Countries and Regions.



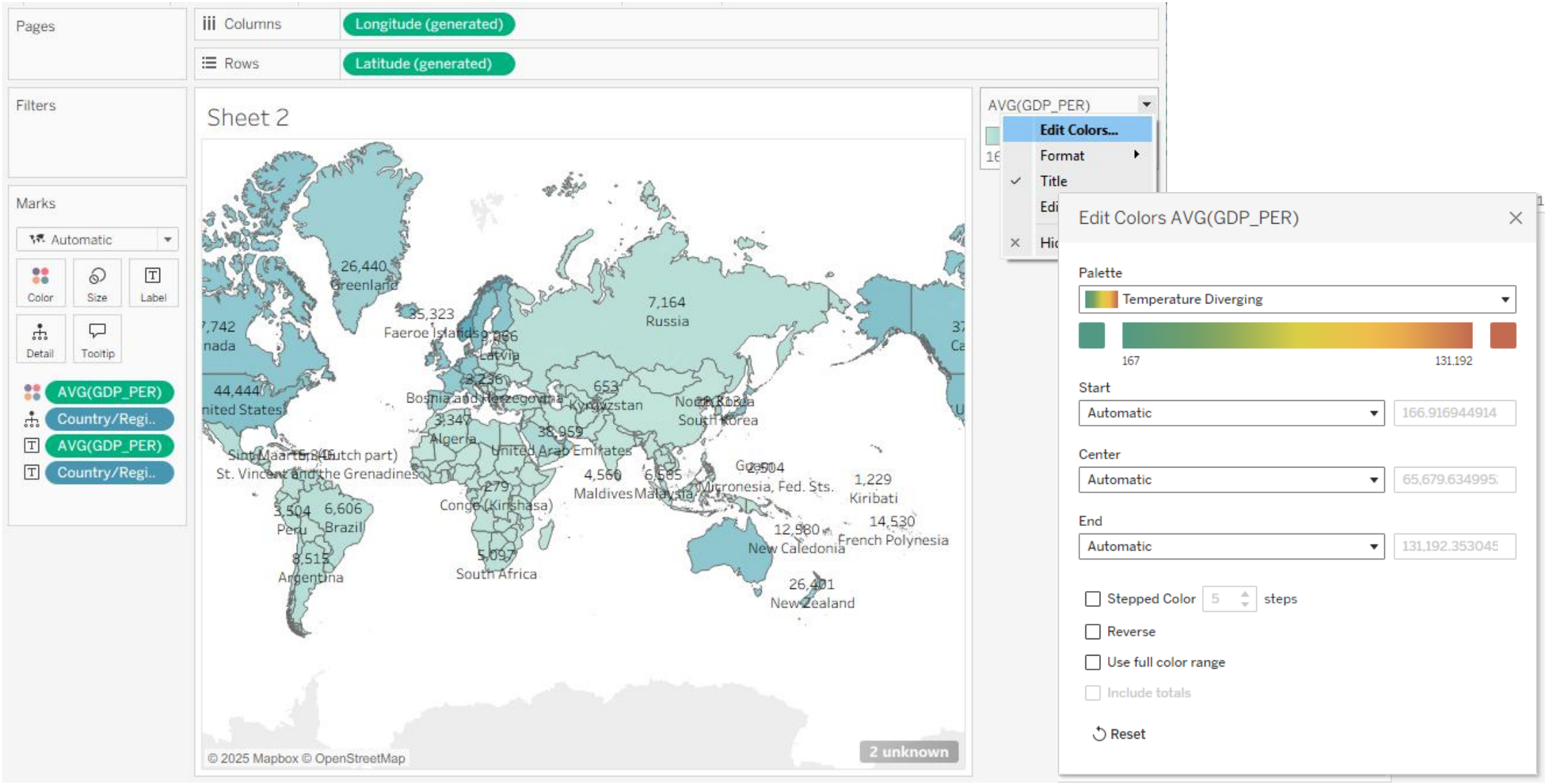
1. Drag **Longitude** to Columns.
2. Drag **Latitude** to Rows.
3. Drag other relative fields to Marks

Task: Per capita GDP in different regions

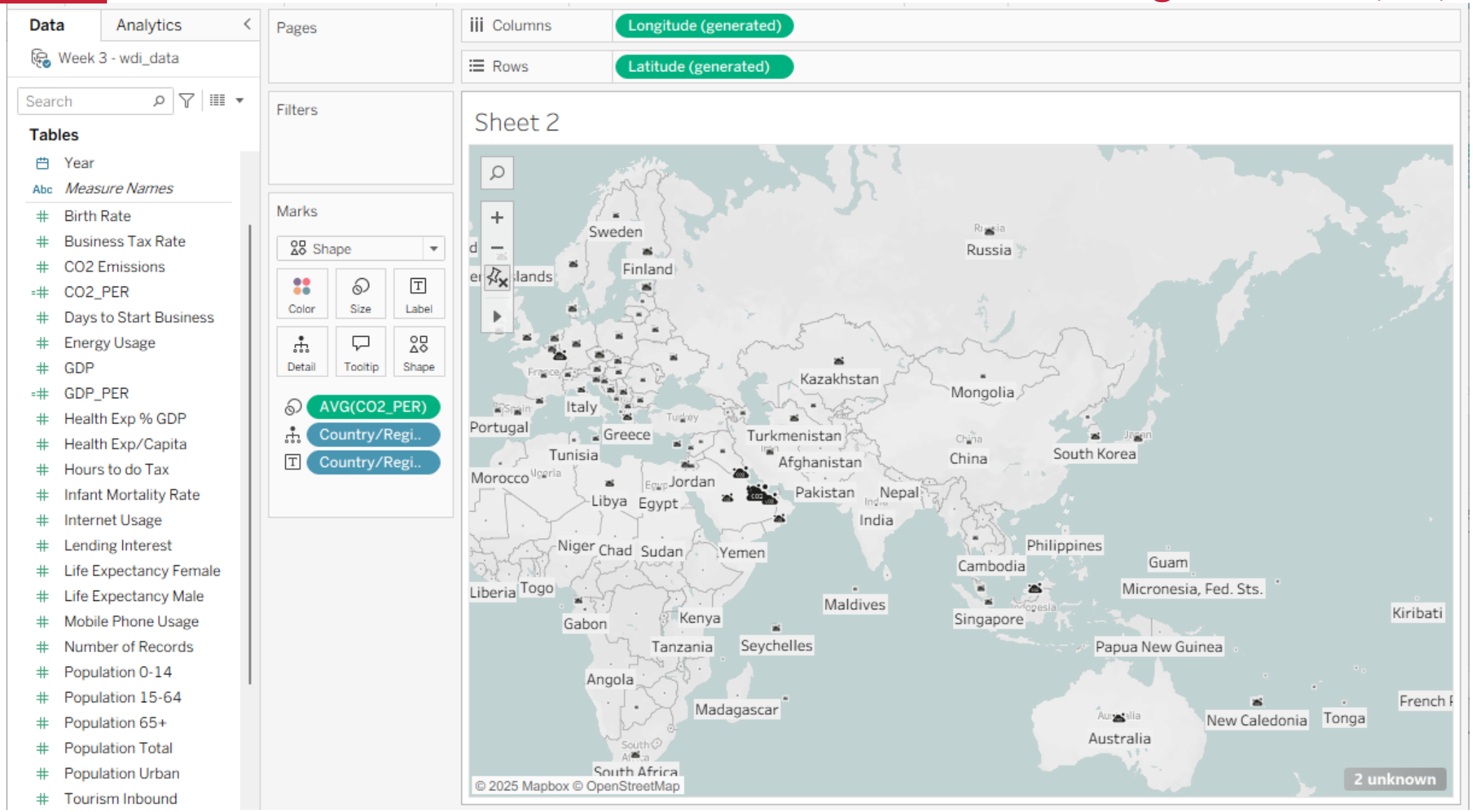
1. Create Calculated Field “GDP_PER”.
2. Drag the filed “GDP” and “Population Total” to generate formula.
3. Drag relative fields to Marks.



Task: Per capita GDP in different regions



Task: CO2 Emissions of Various Countries and Regions.



Change Map Logo

SDSC5002C62 Exploratory Data Anlys & Visua > Datasets

0 selected

Name	Created	Last Modified	Modified By	Size	Status	Actions
co2-cloud.png	6:47pm	6:47pm	Yanru LI	21 KB		
gdp.png	6:47pm	6:47pm	Yanru LI	39 KB		

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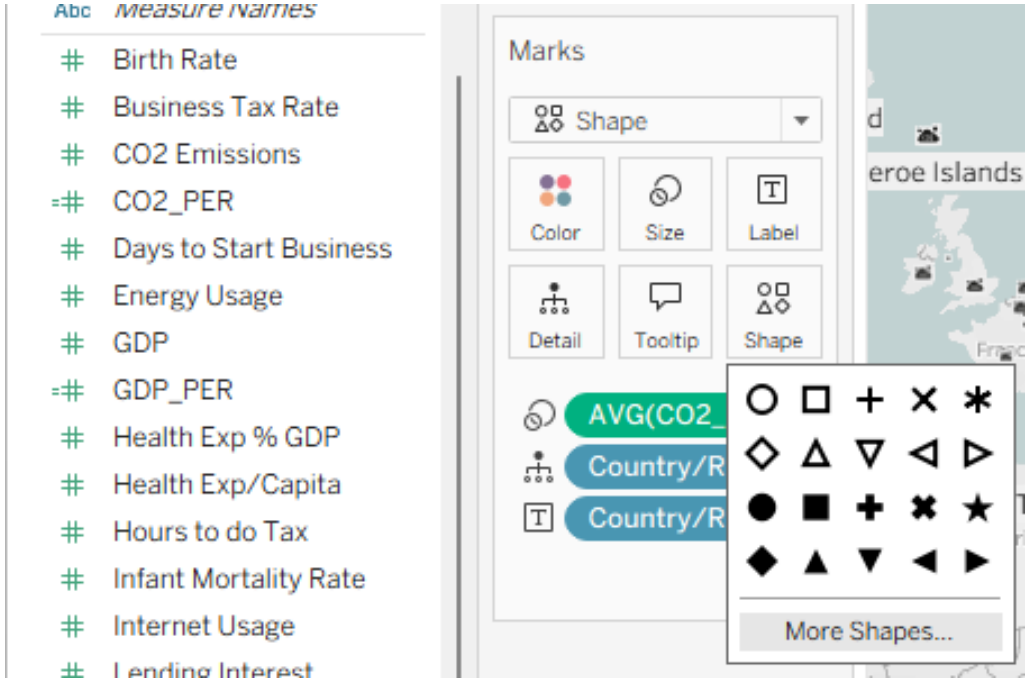
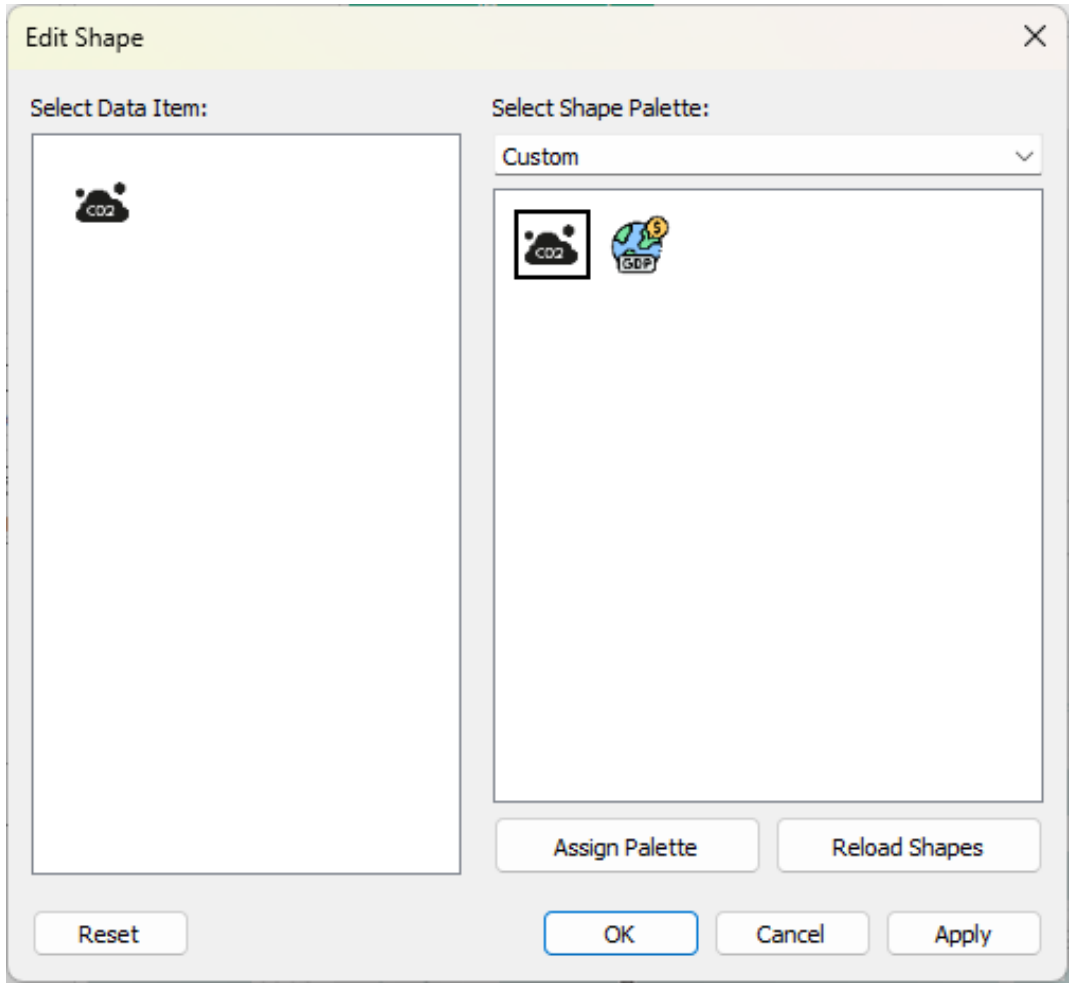
Window Exploer: C:\Users\user name\Documents\My Tableau Repository

Mac:
Cmd+space: My Tableau Repository

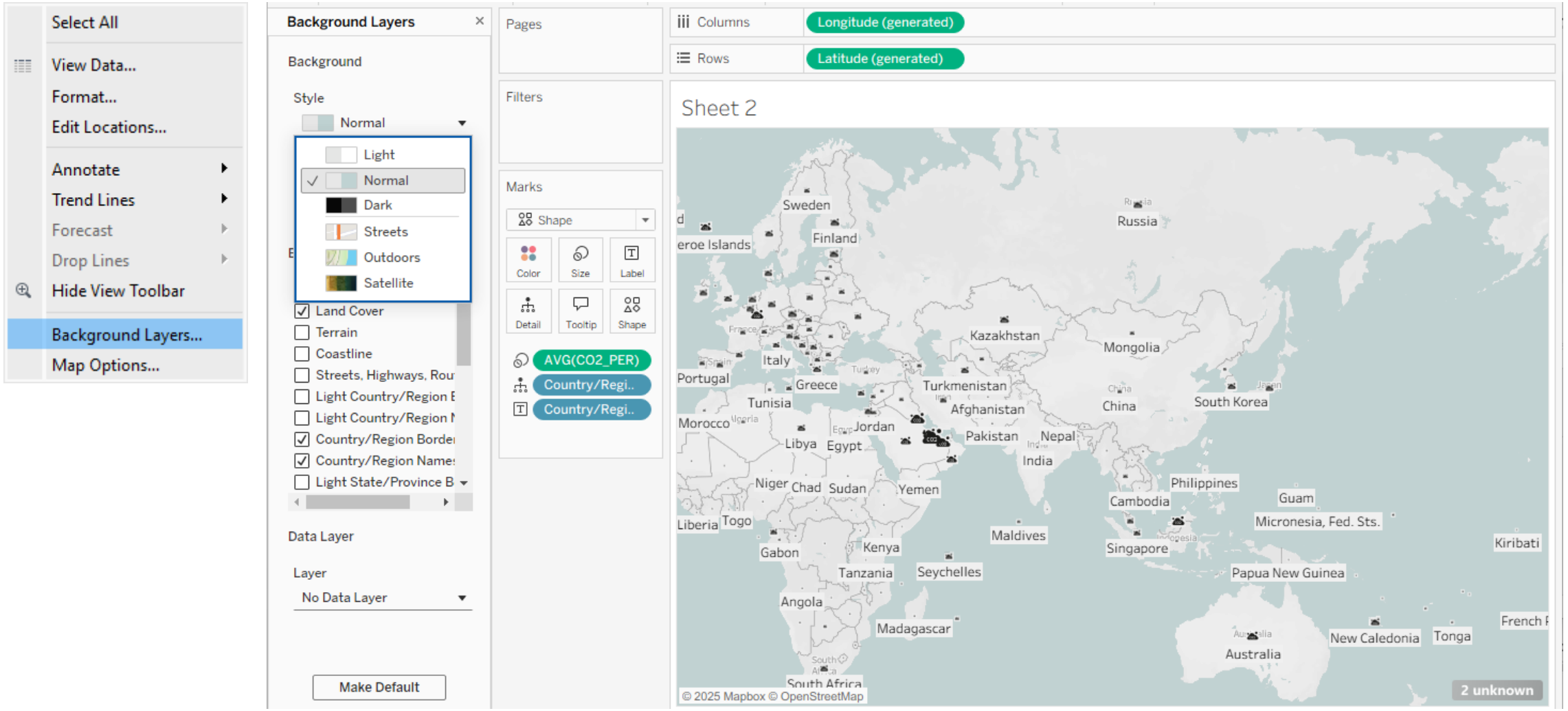
Move the figures into ‘shape’ folder

Change Map Logo

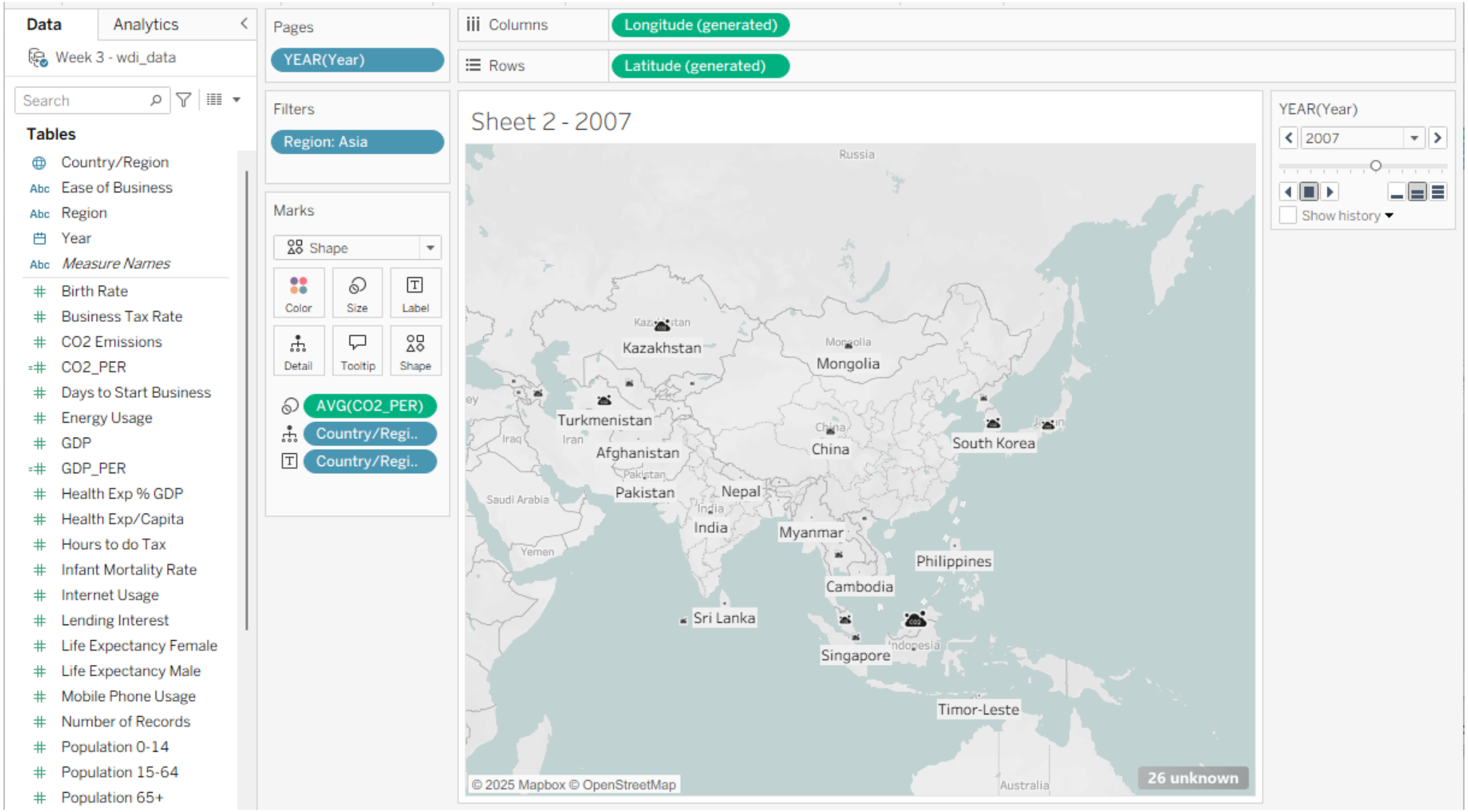




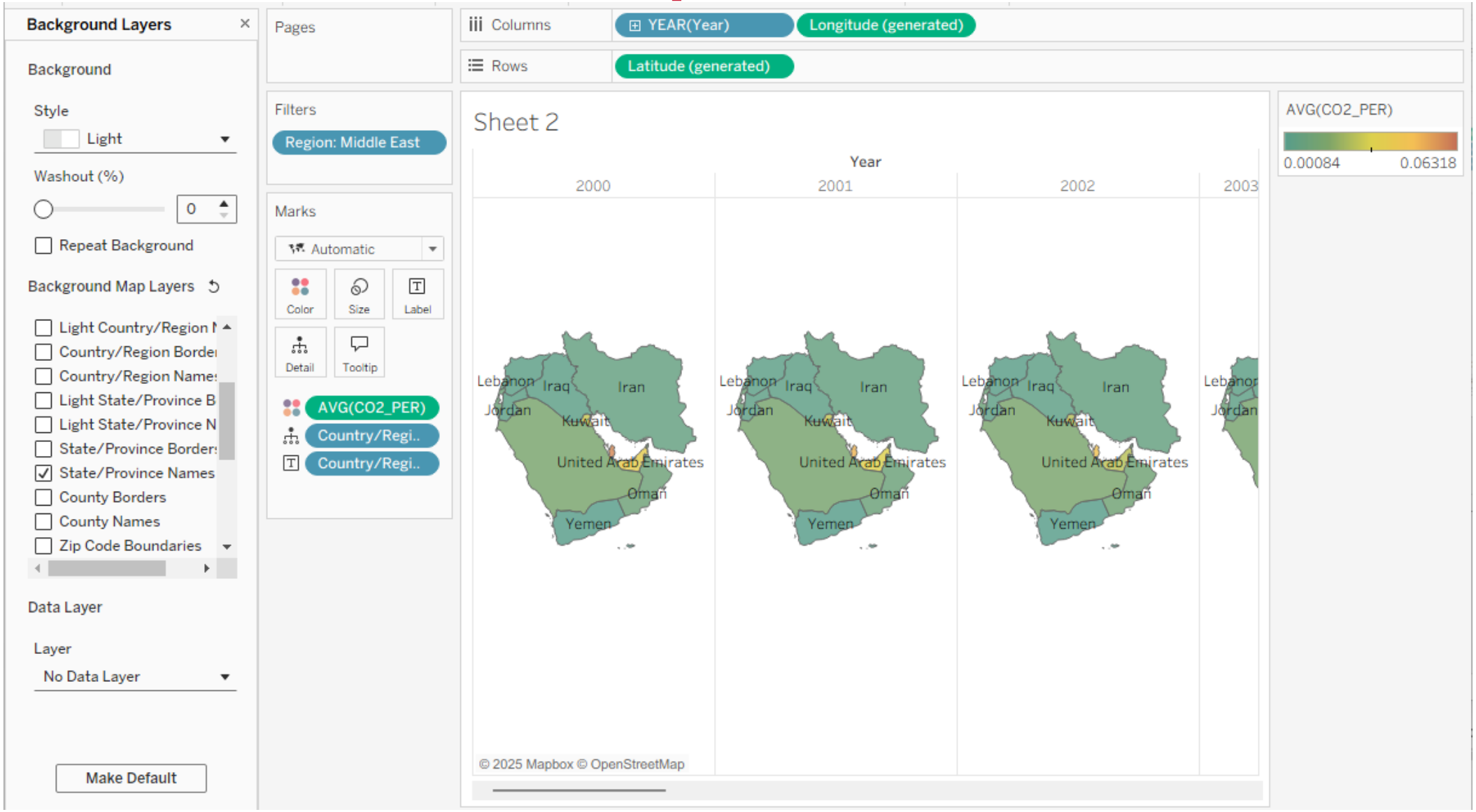
Change the background



Pages and filters



Multi-dimensional Maps



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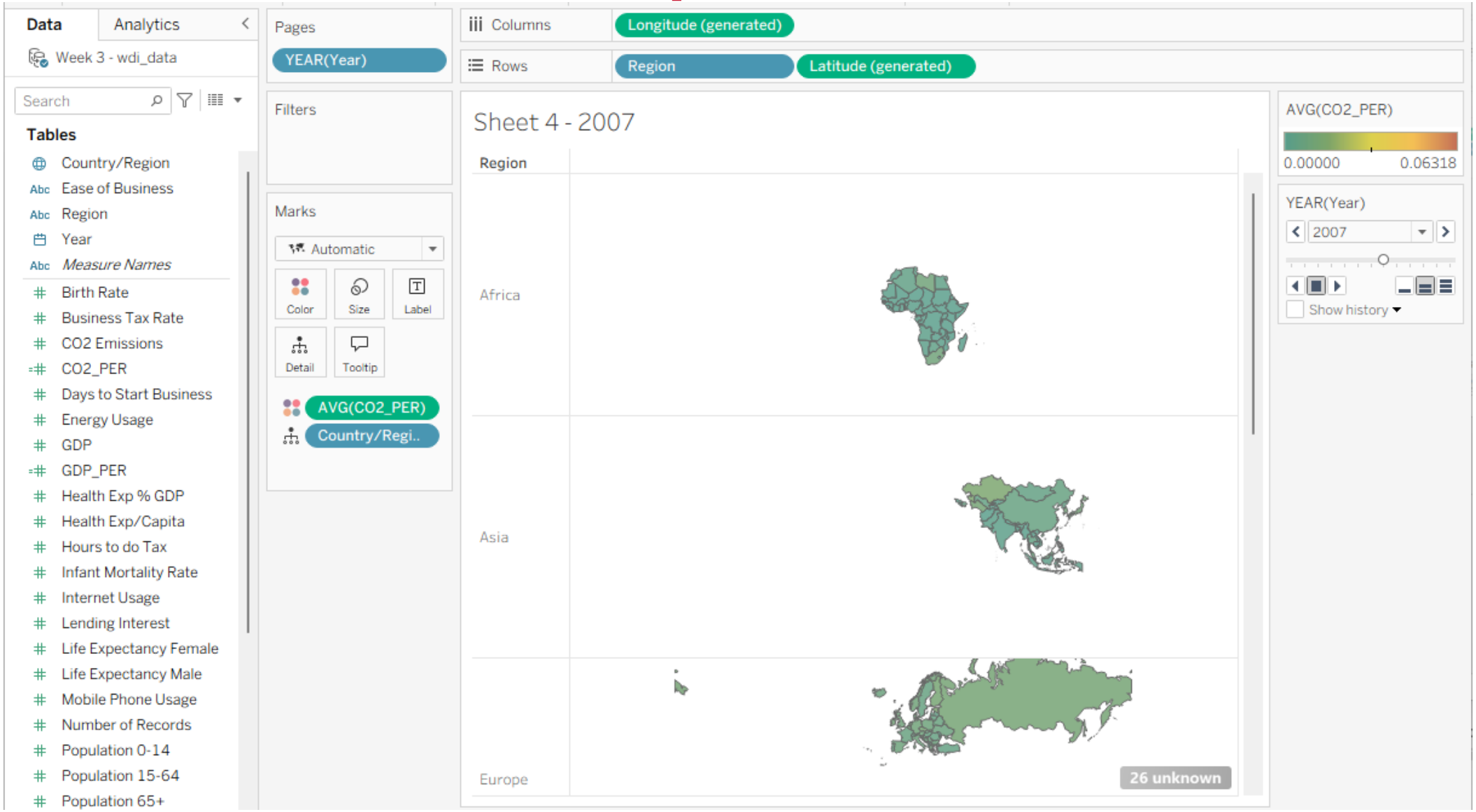
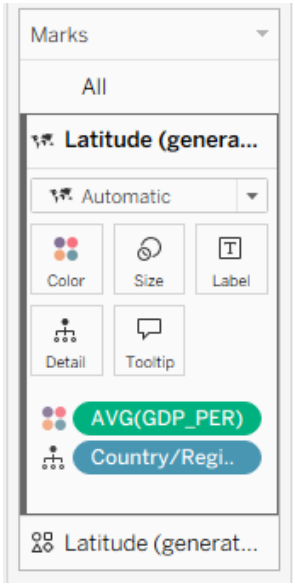


Hybrid Maps


Marks
All
Latitude (genera...
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Color
Size
Label
Detail
Tooltip
AVG(GDP_PER)
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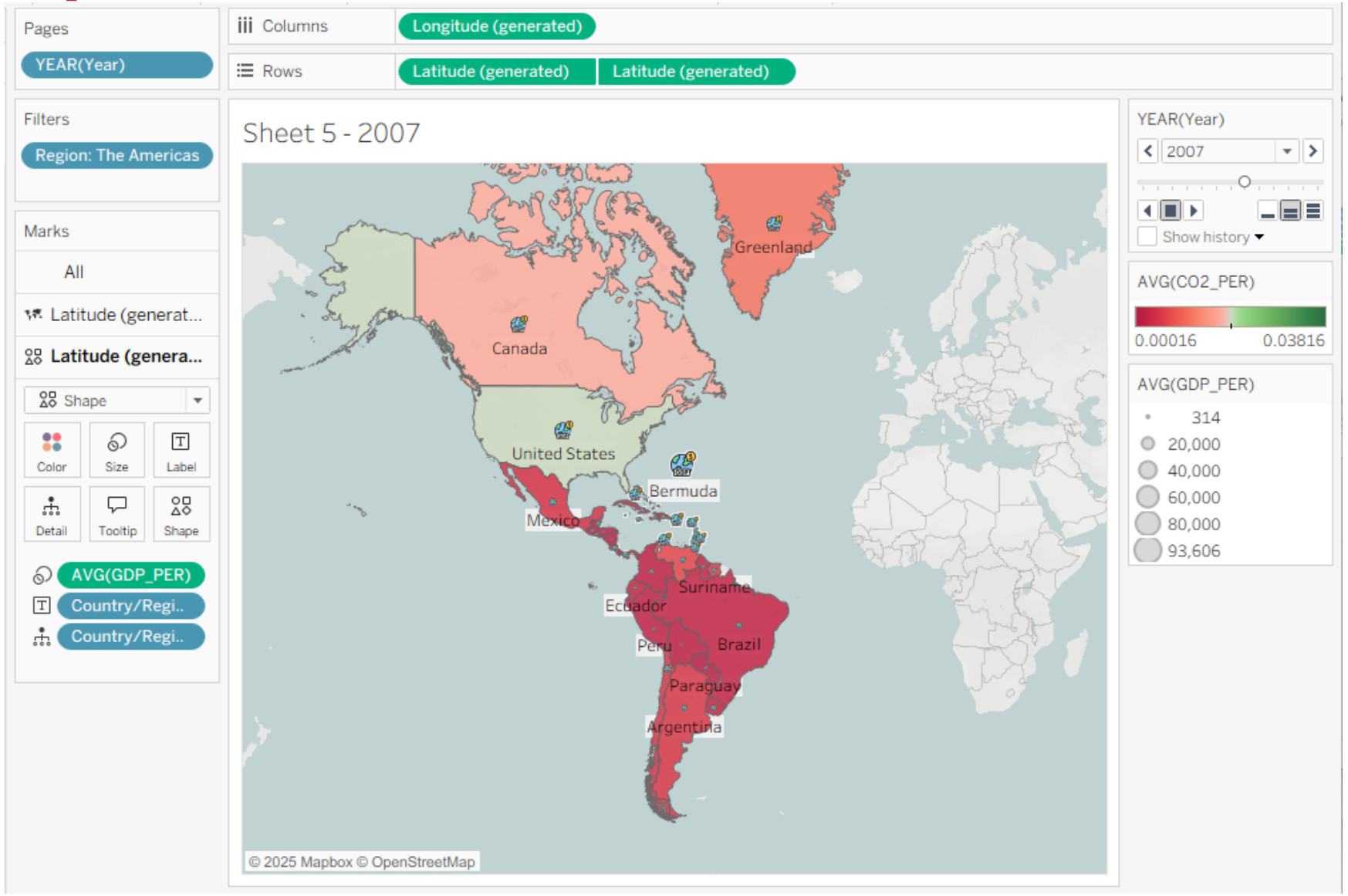
Pages
YEAR(Year)
Filters
Region: The Americas
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Shape
AVG(GDP_PER)
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Columns
Longitude (generated)
Rows
Latitude (generated)
Latitude (generated)
Sheet 5 - 2007
Greenland
Canada
United States
Bermuda
Mexico
Suriname
Ecuador
Peru
Brazil
Paraguay
Argentina
© 2025 Mapbox © OpenStreetMap
YEAR(Year)
2007
Show history
AVG(CO2_PER)
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AVG(GDP_PER)
314
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40,000
60,000
80,000
93,606