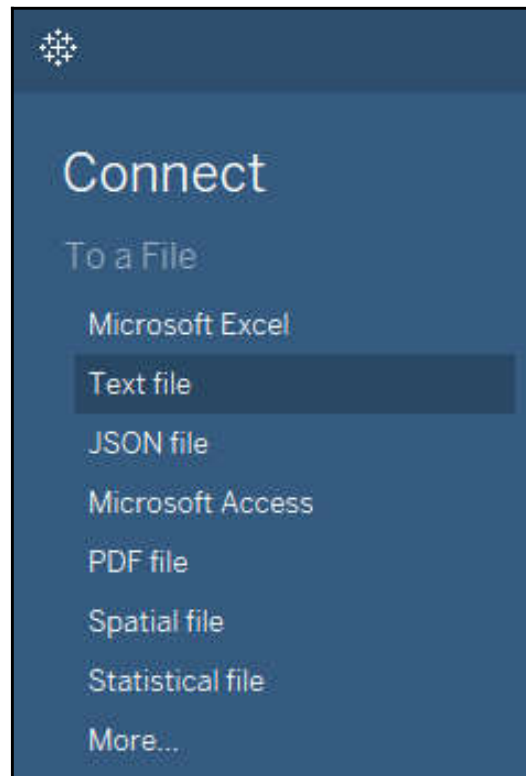


Chapter 1: Getting Started with Tableau Software



Data | Analytics

Baby_names

Dimensions

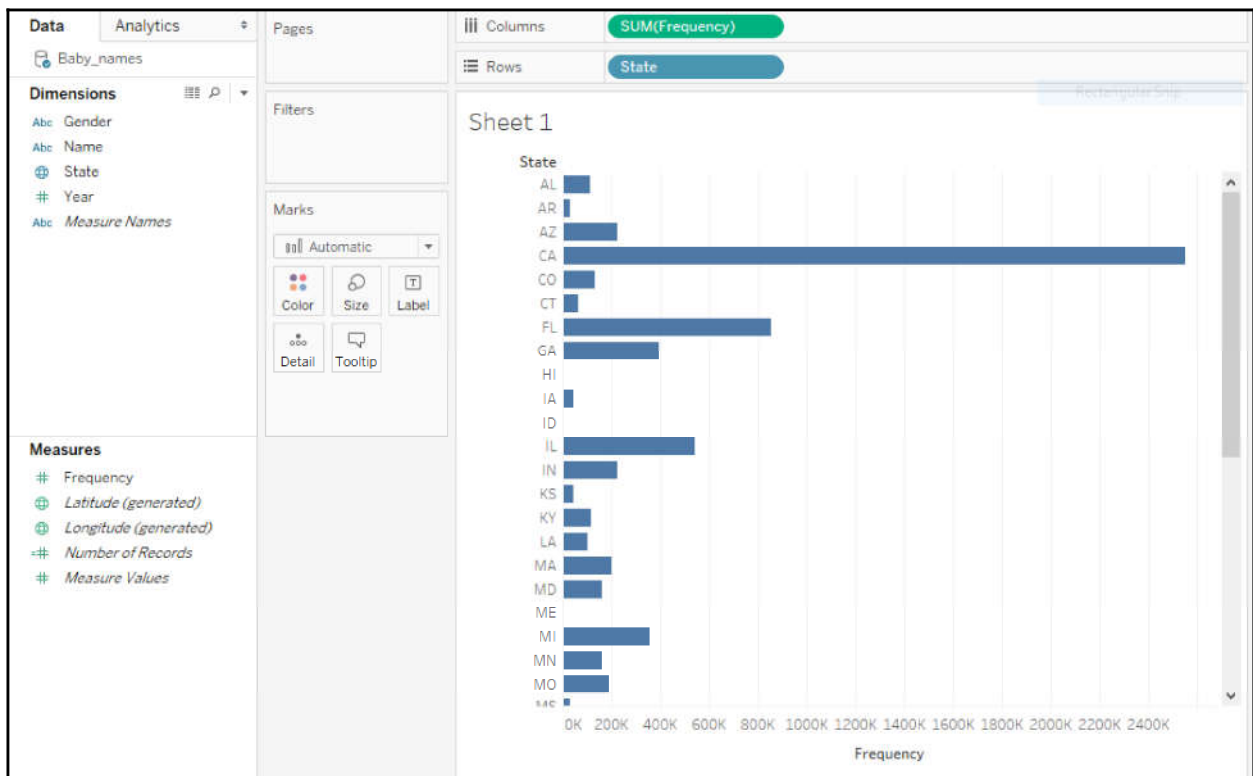
- Abc Gender
- Abc Name
- State
- Year
- Abc Measure Names

Measures

- Frequency
- Latitude (generated)
- Longitude (generated)
- Number of Records
- Measure Values

— □ ×

Show Me



iii Columns SUM(Frequency)

Rows State

Sheet 1

State

State	SUM(Frequency)
AL	
AR	
AZ	
CA	
CO	
CT	
FL	
GA	
HI	
IA	
ID	
IL	
IN	

- Filter...
- Show Filter
- Show Highlighter
- Sort...**
- Format...
- Show Header
- Include in Tooltip
- Edit Aliases...
- Dimension
- Attribute
- Measure ▶
- Edit in Shelf**
- Remove

Sort [State] ✕

Sort order

Ascending

Descending

Sort by

Data source order

Alphabetic

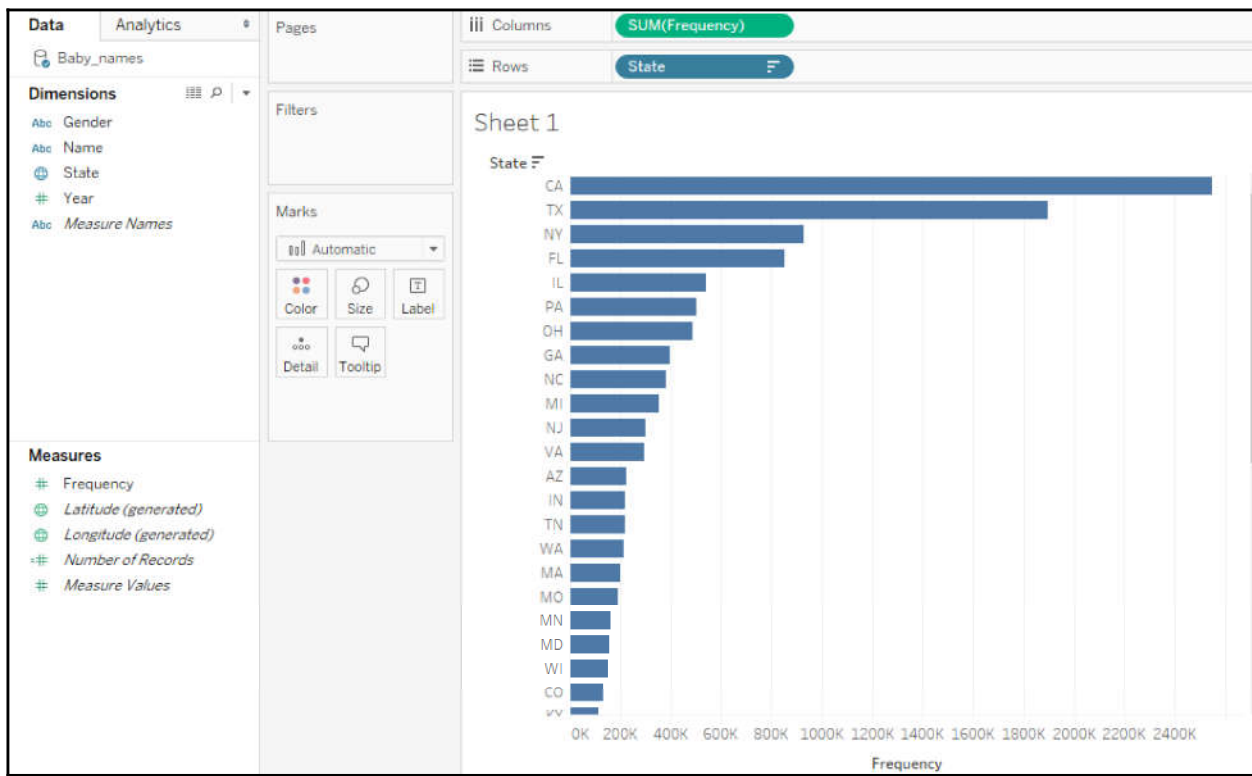
Field Aggregation:

Frequency Sum

Manual

CA	^	Up
TX		
NY		
FL		
IL		
PA		
OH		
GA		
NC		
MI		
NJ	▼	Down

Clear OK Cancel Apply

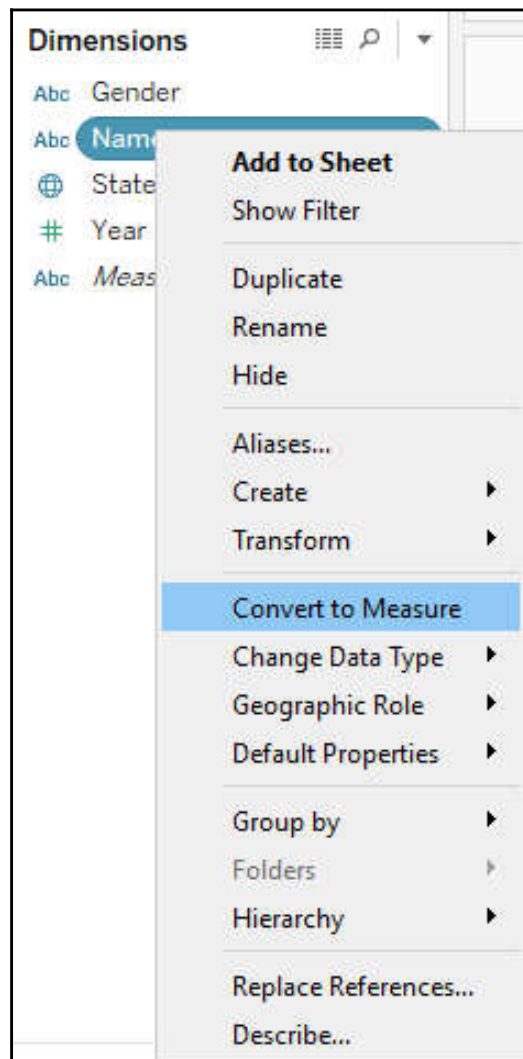


Dimensions

- Gender
- Name
- State
- Year
- Measure Names

Measures

- Frequency
- Latitude (generated)
- Longitude (generated)
- Number of Records
- Measure Values



Pages	Columns	Gender																																							
	Rows	State																																							
Filters	Sheet 1																																								
Marks	<table border="1"> <thead> <tr> <th>State</th> <th colspan="2">Gender</th> </tr> <tr> <th></th> <th>female</th> <th>male</th> </tr> </thead> <tbody> <tr><td>AL</td><td>34,763</td><td>76,722</td></tr> <tr><td>AR</td><td>10,042</td><td>21,330</td></tr> <tr><td>AZ</td><td>76,865</td><td>147,296</td></tr> <tr><td>CA</td><td>1,109,761</td><td>1,440,500</td></tr> <tr><td>CO</td><td>43,476</td><td>90,440</td></tr> <tr><td>CT</td><td>17,734</td><td>43,496</td></tr> <tr><td>FL</td><td>348,089</td><td>503,392</td></tr> <tr><td>GA</td><td>151,414</td><td>244,948</td></tr> <tr><td>HI</td><td></td><td>100</td></tr> <tr><td>IA</td><td>13,941</td><td>28,056</td></tr> <tr><td>ID</td><td>1,923</td><td>1,474</td></tr> </tbody> </table>		State	Gender			female	male	AL	34,763	76,722	AR	10,042	21,330	AZ	76,865	147,296	CA	1,109,761	1,440,500	CO	43,476	90,440	CT	17,734	43,496	FL	348,089	503,392	GA	151,414	244,948	HI		100	IA	13,941	28,056	ID	1,923	1,474
State	Gender																																								
	female	male																																							
AL	34,763	76,722																																							
AR	10,042	21,330																																							
AZ	76,865	147,296																																							
CA	1,109,761	1,440,500																																							
CO	43,476	90,440																																							
CT	17,734	43,496																																							
FL	348,089	503,392																																							
GA	151,414	244,948																																							
HI		100																																							
IA	13,941	28,056																																							
ID	1,923	1,474																																							
Automatic Color Size Text Detail Tooltip SUM(Frequen..																																									

SUM(Frequen..

The image shows a context menu for a SUM measure in a data visualization tool. The menu is open over a table with columns 'SUM(Frequ..)' and 'HI'. The 'Measure (Sum)' option is selected, and a sub-menu is open showing various aggregation functions like Sum, Average, Median, etc.

Measure	HI
SUM(Frequ..)	13,941
	1,923
	217,103
	78,003
	14,733
	37,037
	33,593
	71,178

The context menu options are:

- Filter...
- Show Filter
- Format...
- Include in Tooltip
- Dimension
- Attribute
- Measure (Sum)
 - Sum
 - Average
 - Median
 - Count
 - Count (Distinct)
 - Minimum
 - Maximum
 - Percentile
 - Std. Dev
 - Std. Dev (Pop.)
 - Variance
 - Variance (Pop.)
- Discrete
- Continuous
- Edit in Shelf**
- Add Table Calculation...
- Quick Table Calculation
- Remove

Filter [Name] ✕

General Wildcard Condition Top

Select from list Custom value list Use all ☰

jac ✕

- Jace
- Jack
- Jackson
- Jacob
- Jacqueline

- Aaliyah
- Aarav
- Aaron
- Abby
- Abel
- Abigail

Exclude

Summary

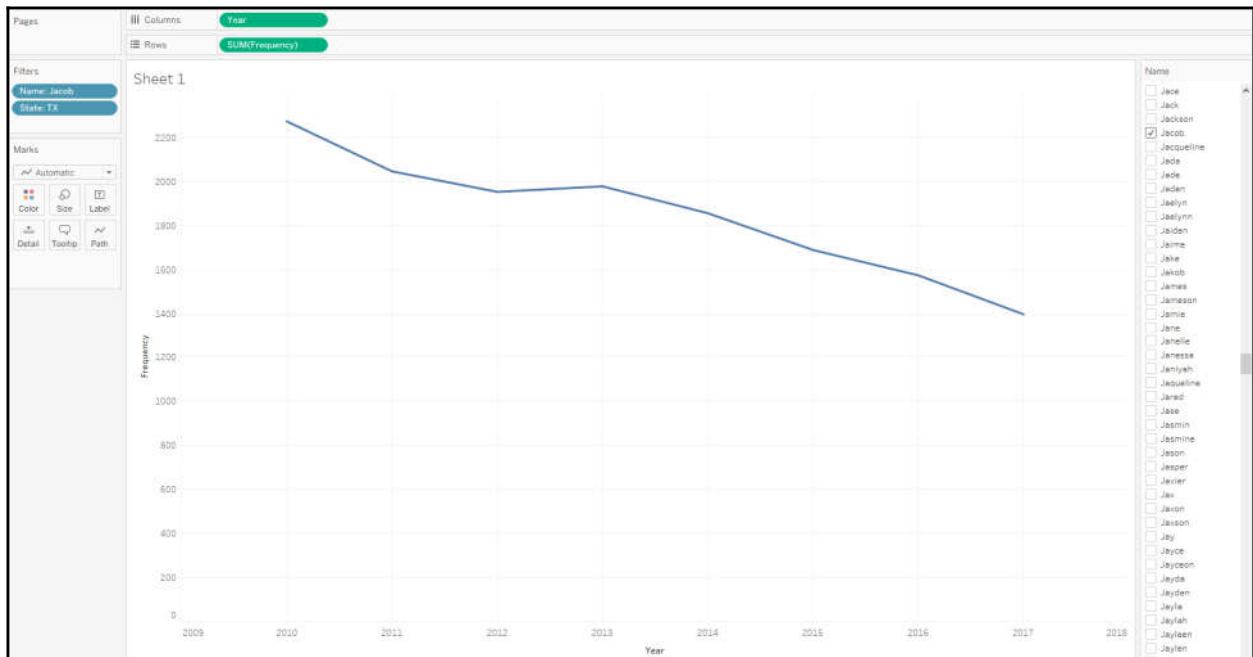
Field: [Name]

Selection: Selected 1 of 1083 values

Wildcard: All

Condition: None

Limit: None










Filters

Name: Jacob

- Edit Filter...
- Show Filter
- Clear Filter
- Add to Context
- Apply to Worksheets ▶
- Create Set...
- Dimension
 - Attribute
 - Measure ▶
- Remove

- Edit Filter...
- Remove Filter
- Apply to Worksheets ▶

- Format Filters...
- Customize ▶
- Show Title
- Edit Title...

- Single Value (list) 
- Single Value (dropdown) 
- Single Value (slider) 
- Multiple Values (list) 
- Multiple Values (dropdown) 
- Multiple Values (custom list) 
- Wildcard Match 

- Only Relevant Values
- All Values in Database
- Include Values
- Exclude Values

- × Hide Card

Filter [Name] ✕

General Wildcard Condition Top

Select from list
 Custom value list
 Use all
 ☰

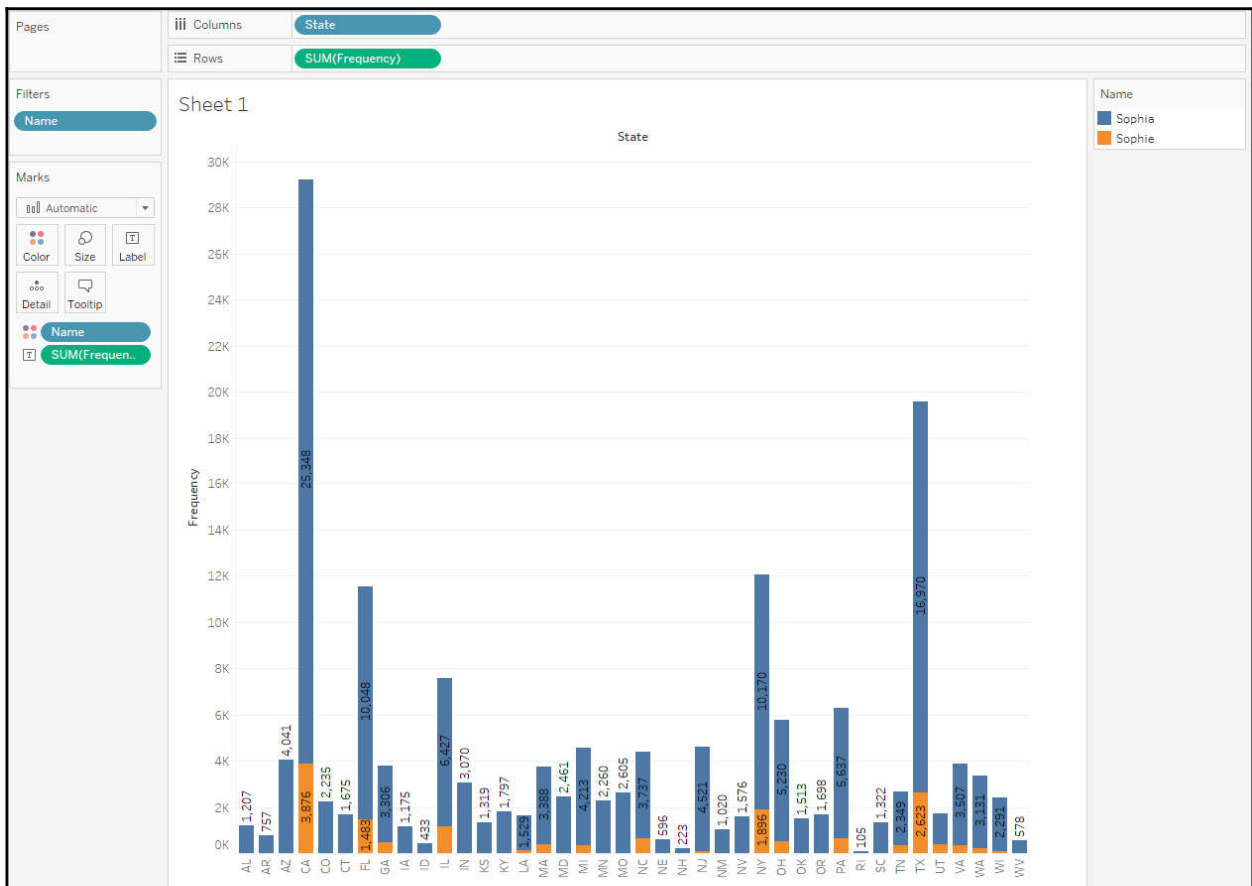
soph ✕

Sophia

Sophie

Aaliyah

Aarav



Marks

Automatic

Color Size Label

Color

Edit Colors...

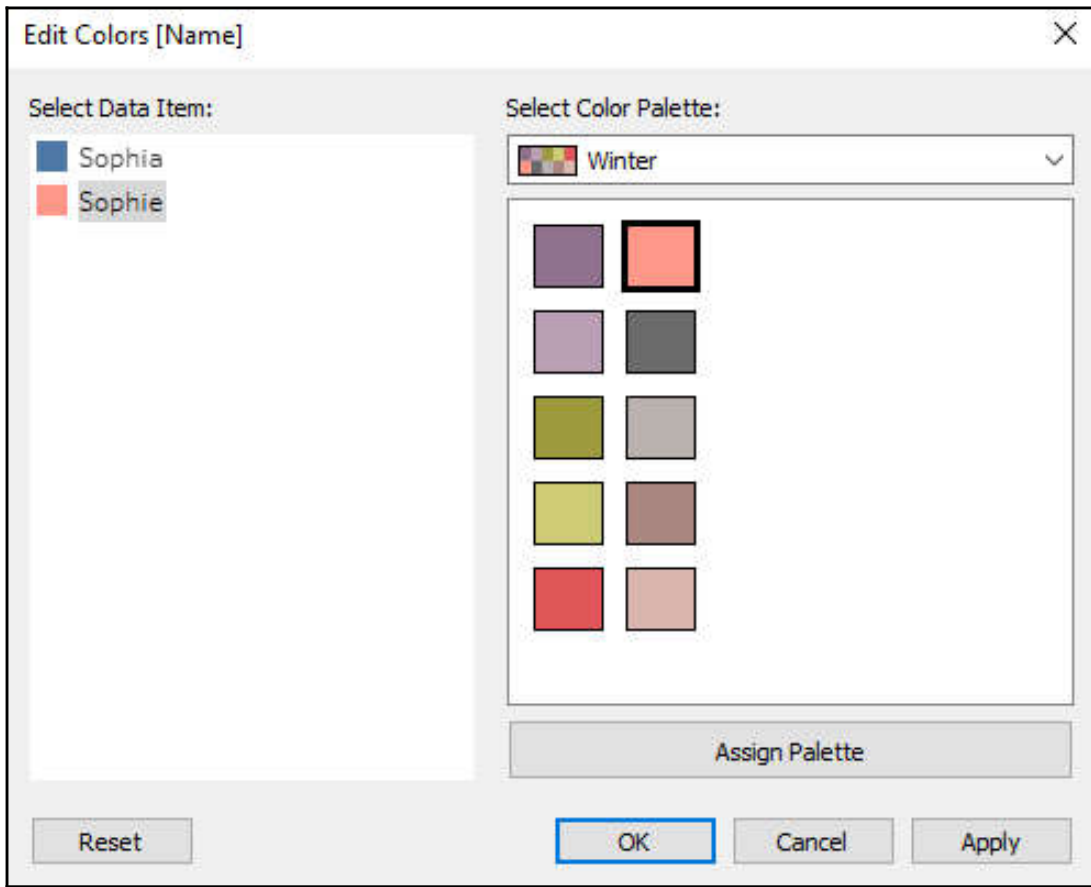
Opacity

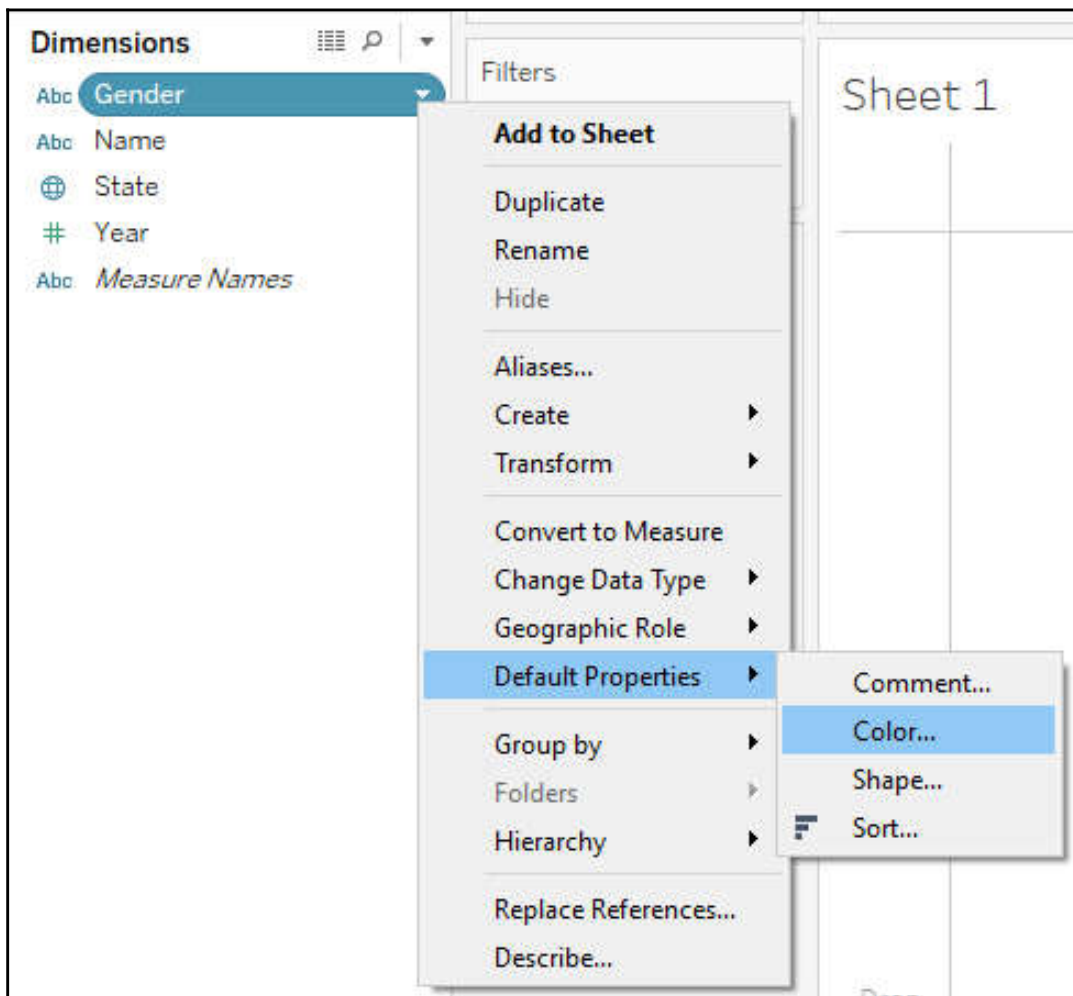
100%

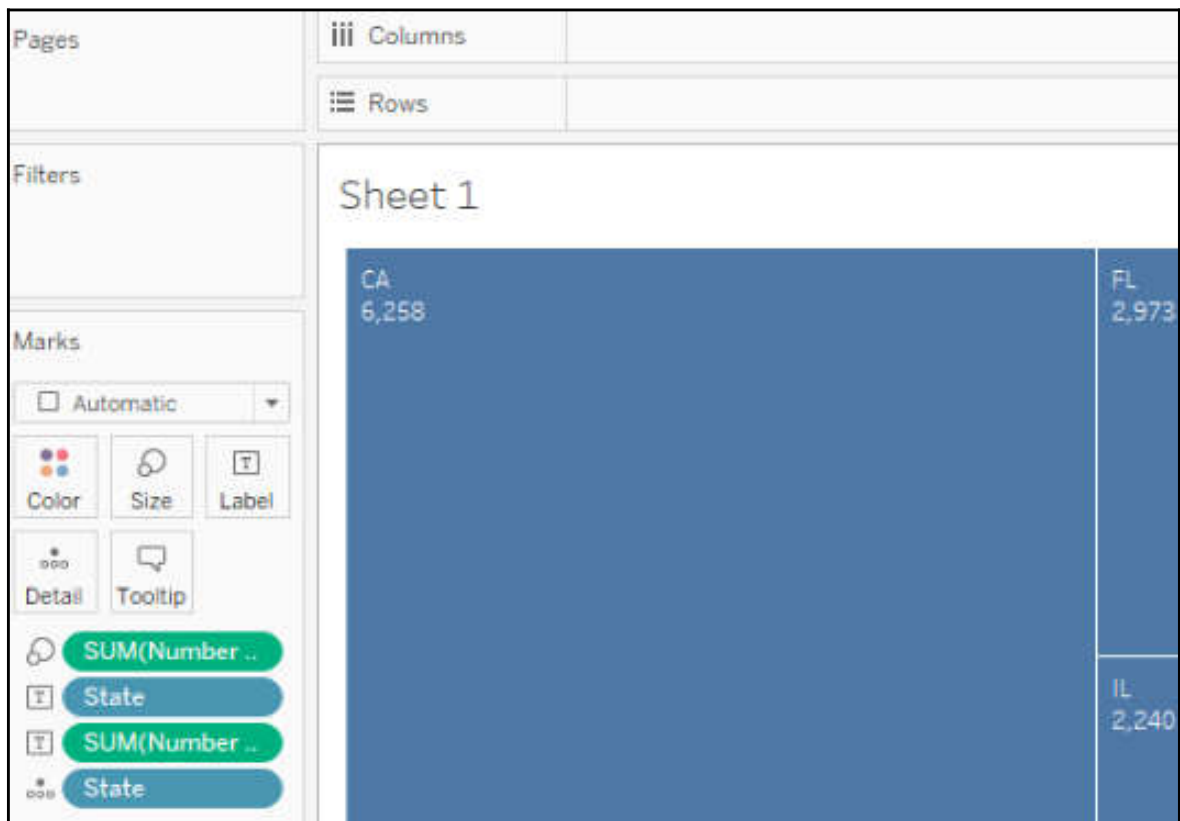
Effects

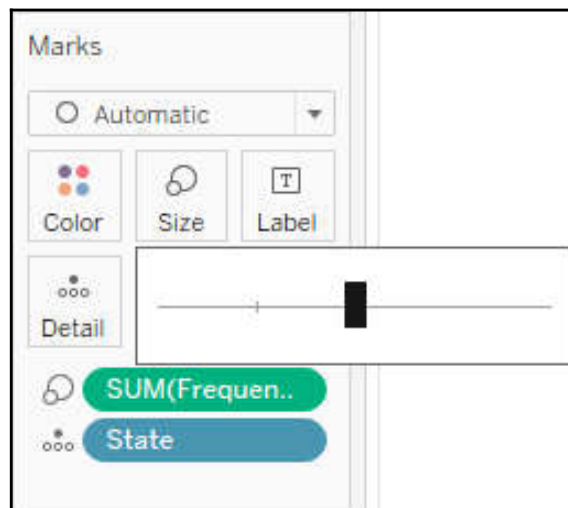
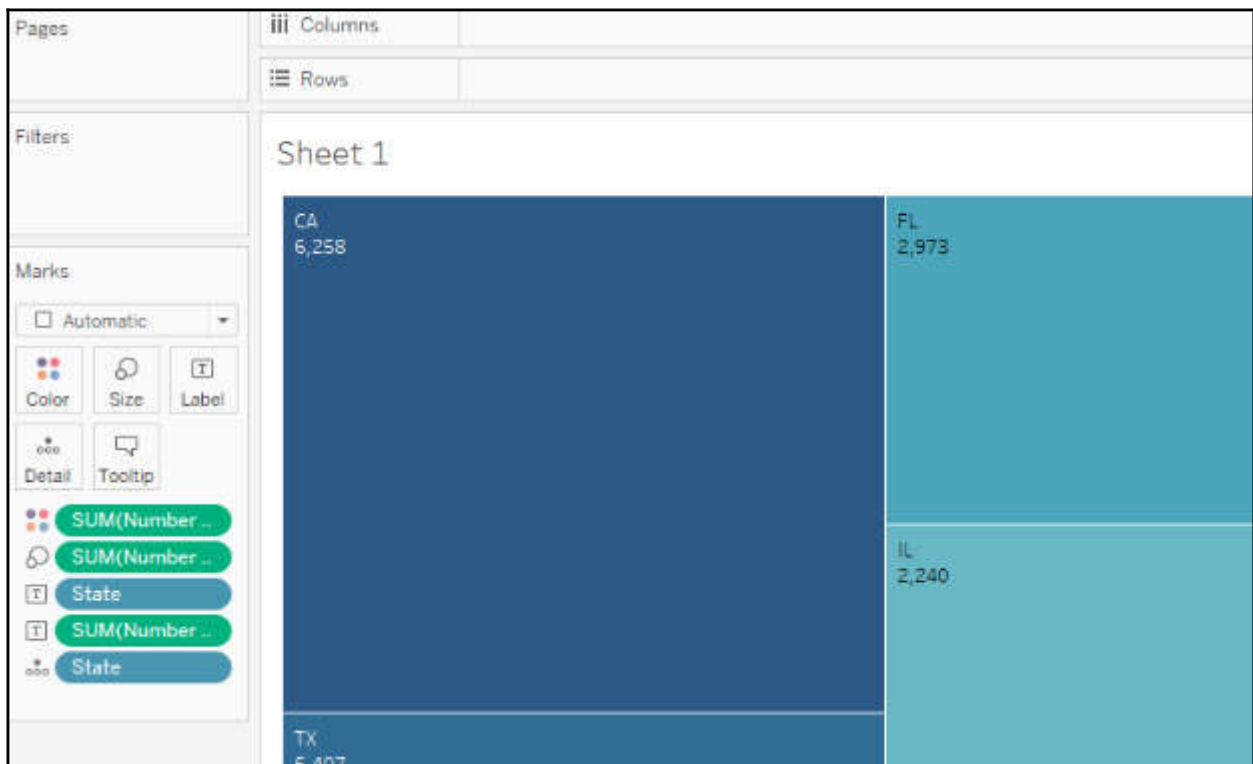
Border: Automatic

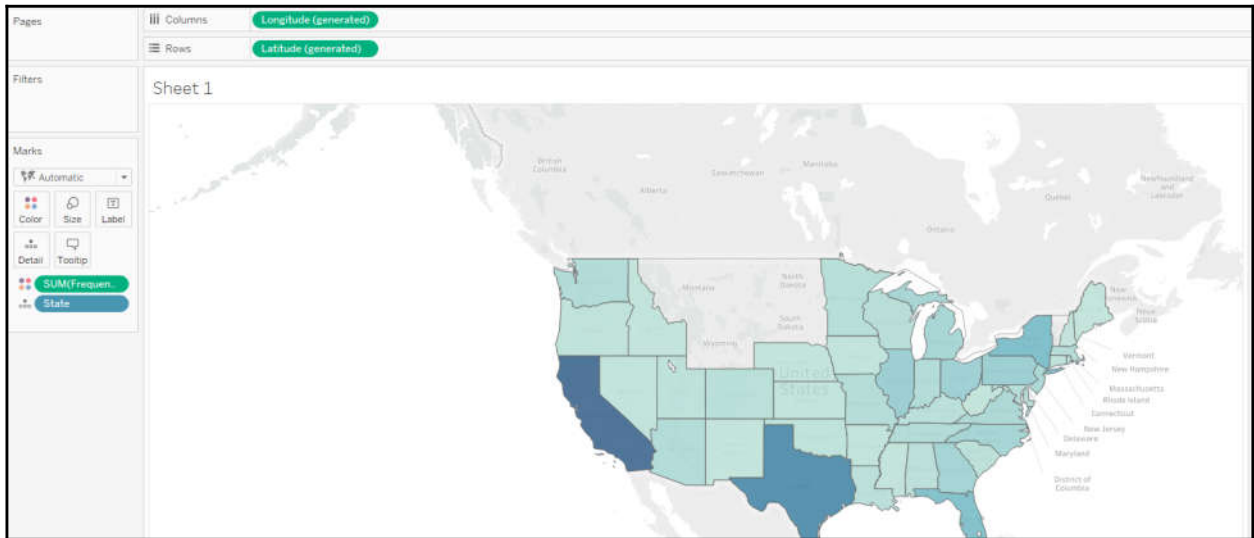
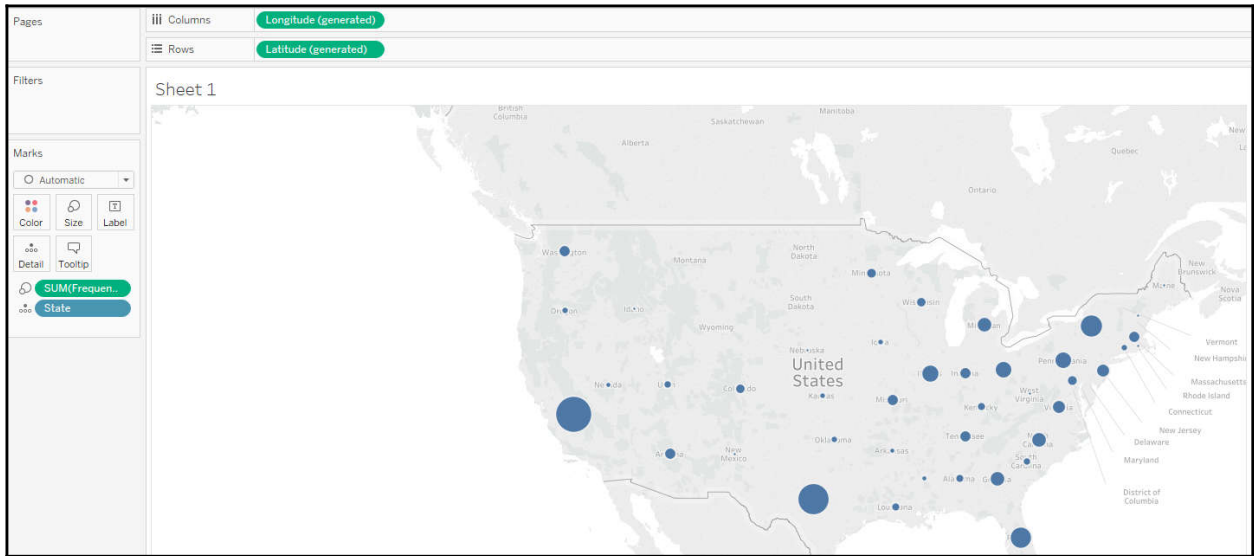
Halo:

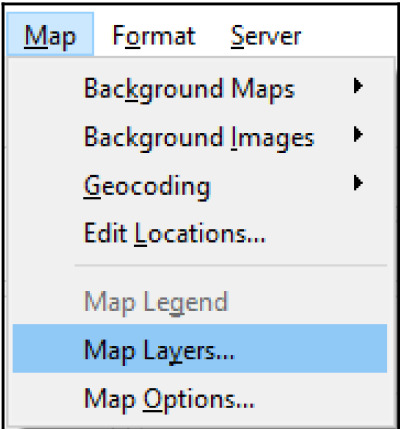












Map Layers ✕

Background

Style: ▼

Washout: 

Repeat Background

Map Layers

- Base
- Land Cover
- Coastline
- Streets and Highways
- Light Country/Region B...
- Light Country/Region N...
- Country/Region Borders
- Country/Region Names
- Light State/Province Bo...
- Light State/Province Na...
- State/Province Borders
- State/Province Names
- County Borders
- County Names
- Zip Code Boundaries
- Zip Code Labels
- Area Code Boundaries
- Area Code Labels
- US Metro Boundaries (C...
- US Metro Labels (CBSA)
- Place Names

Data Layer

Layer: ▼

Columns	Longitude (generated)
Rows	Latitude (generated) Latitude (generated)

Marks

^ All

Automatic

Color Size Label


Detail Tooltip


State




Latitude (ge... Latitude (ge...



Marks


∨ All


∧ Latitude (g... 


 Automatic ▾

 Color  Size  Label

 Detail  Tooltip


 SUM(Frequen..

 State

∨ Latitude (ge... 

Edit Colors [Frequency] ✕

Palette:

 Gray ▾

100 2,550,261

Stepped Color Steps

Reversed

Use Full Color Range

Include Totals Advanced >>

Reset OK Cancel Apply

Color Size Label

Color

Edit Colors...

Opacity

51%

Effects

Border: Automatic

Halo:

Marks

▼ All

▼ Latitude (ge... 🗑️

^ **Latitude (g...** 🕒

🕒 Pie

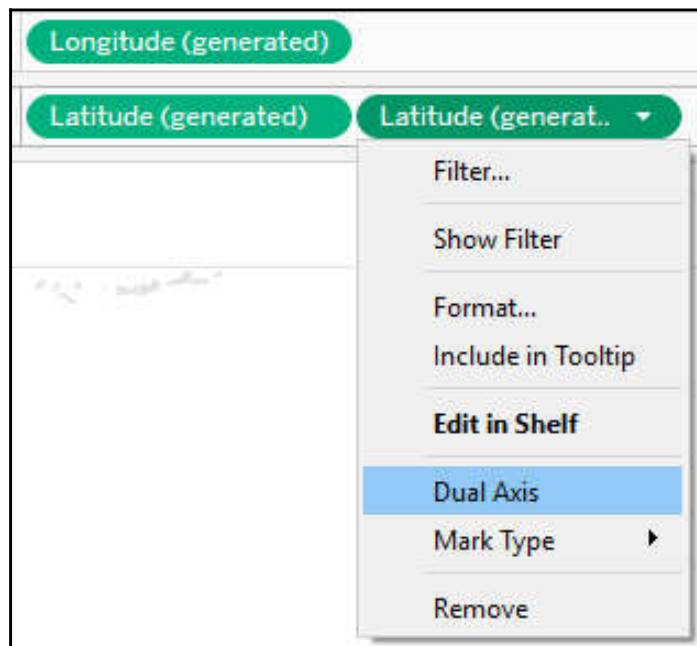
Color Size Label

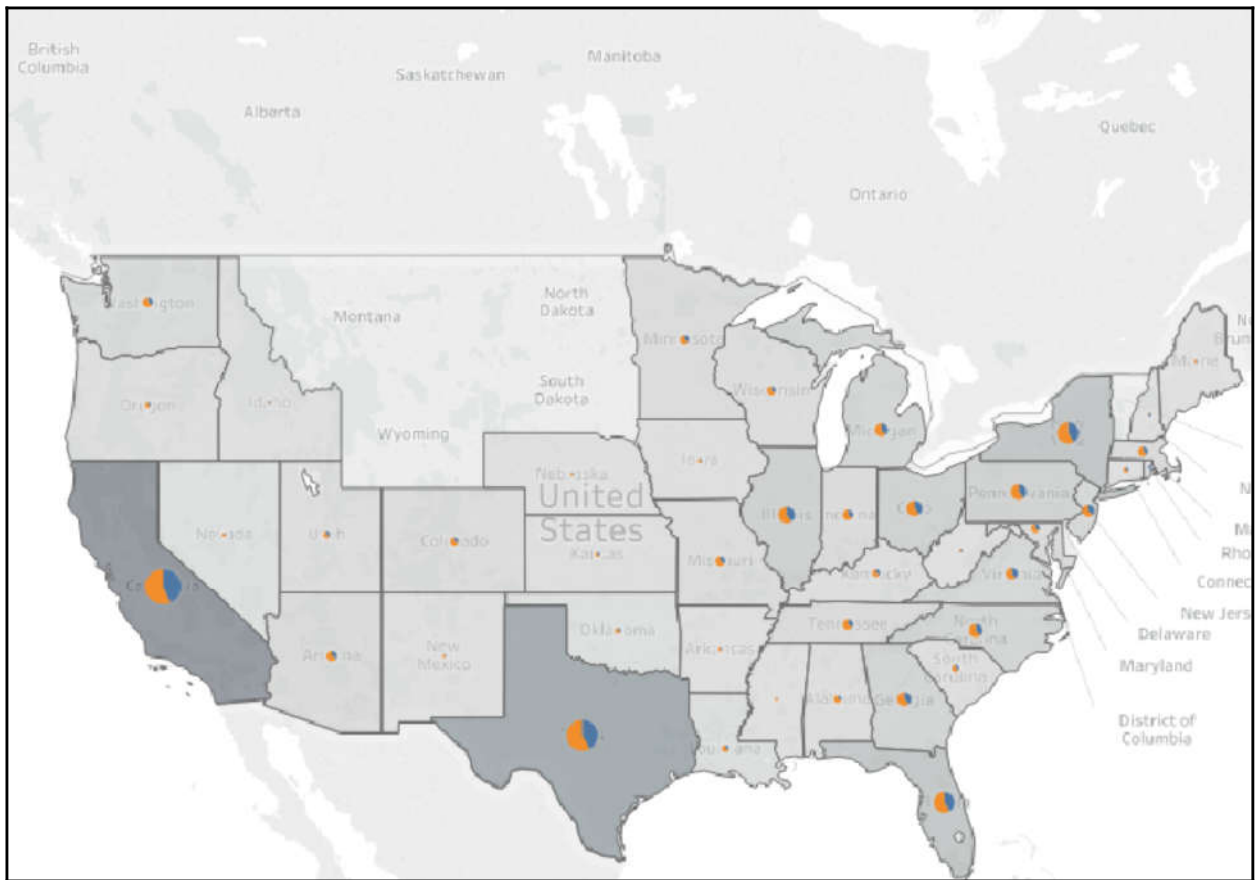
Detail Tooltip Angle

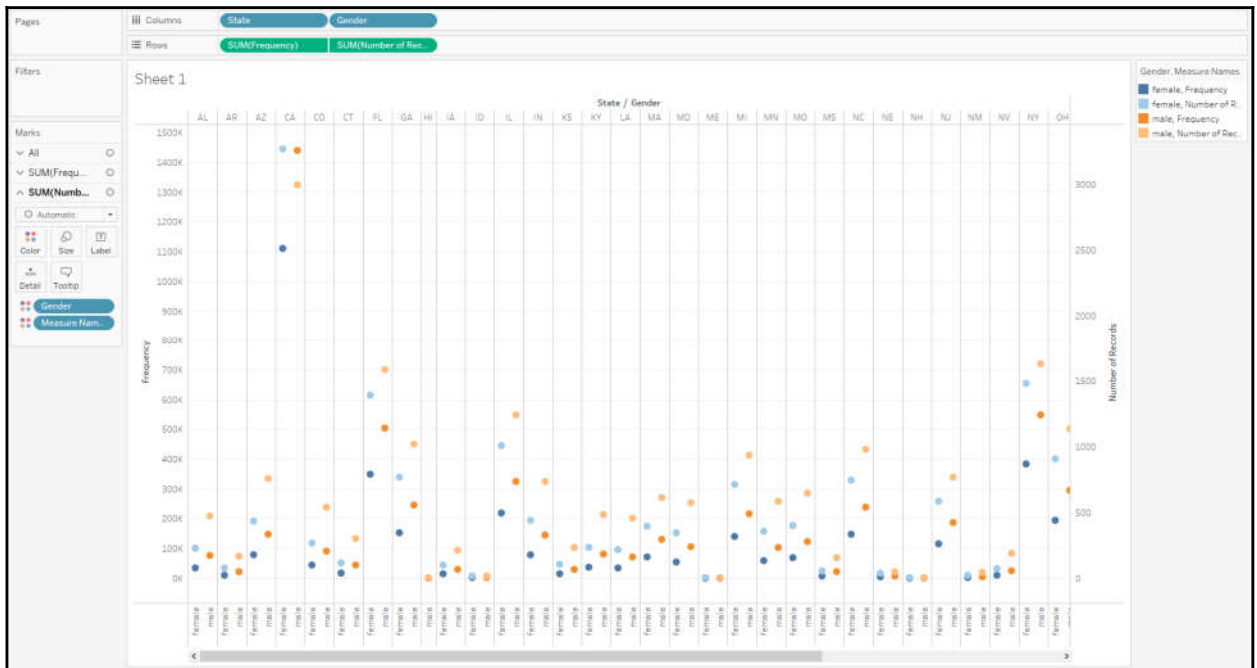
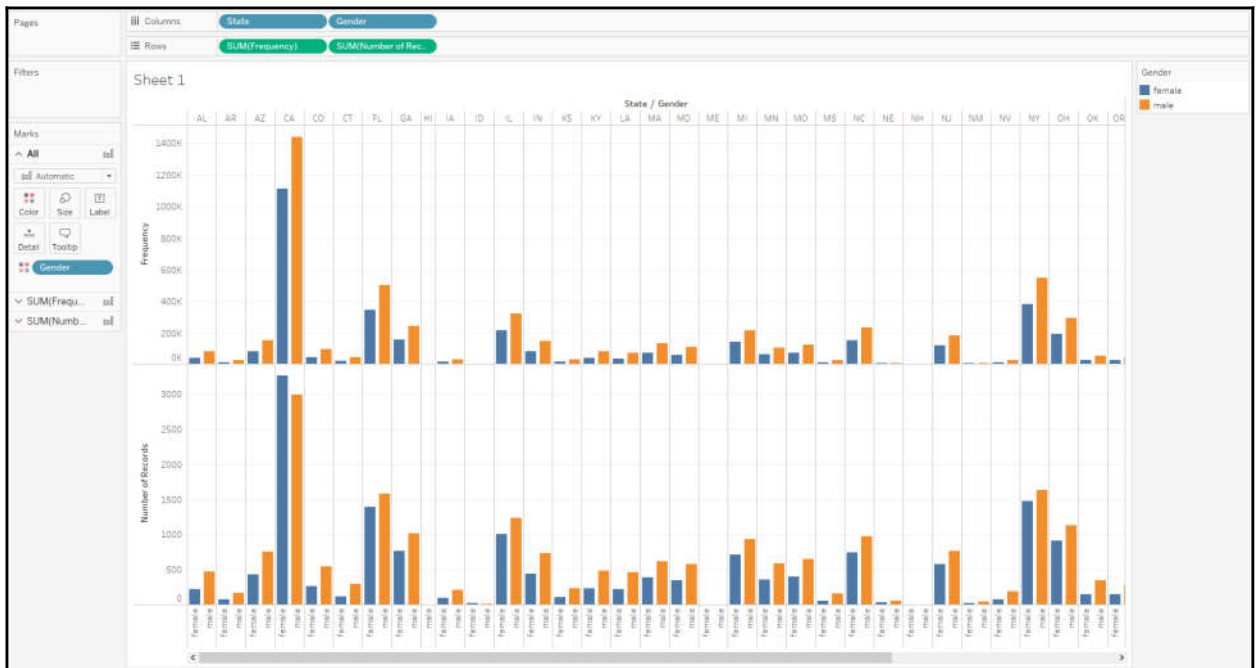
Gender

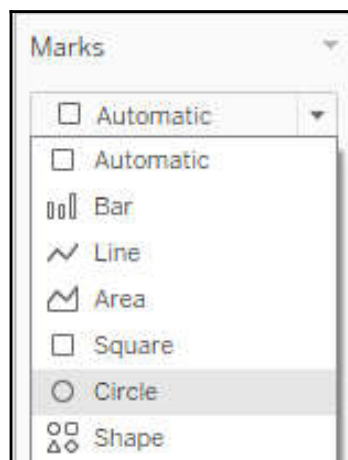
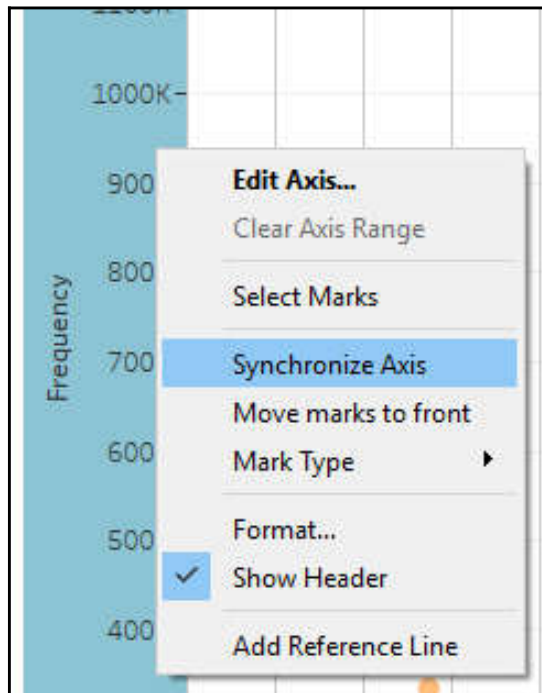
SUM(Frequen..

State









Filter [Name] ✕

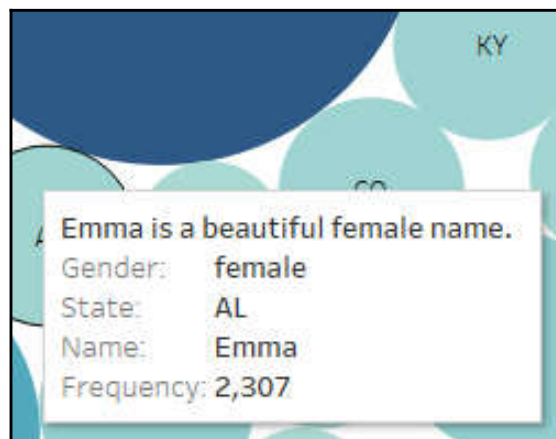
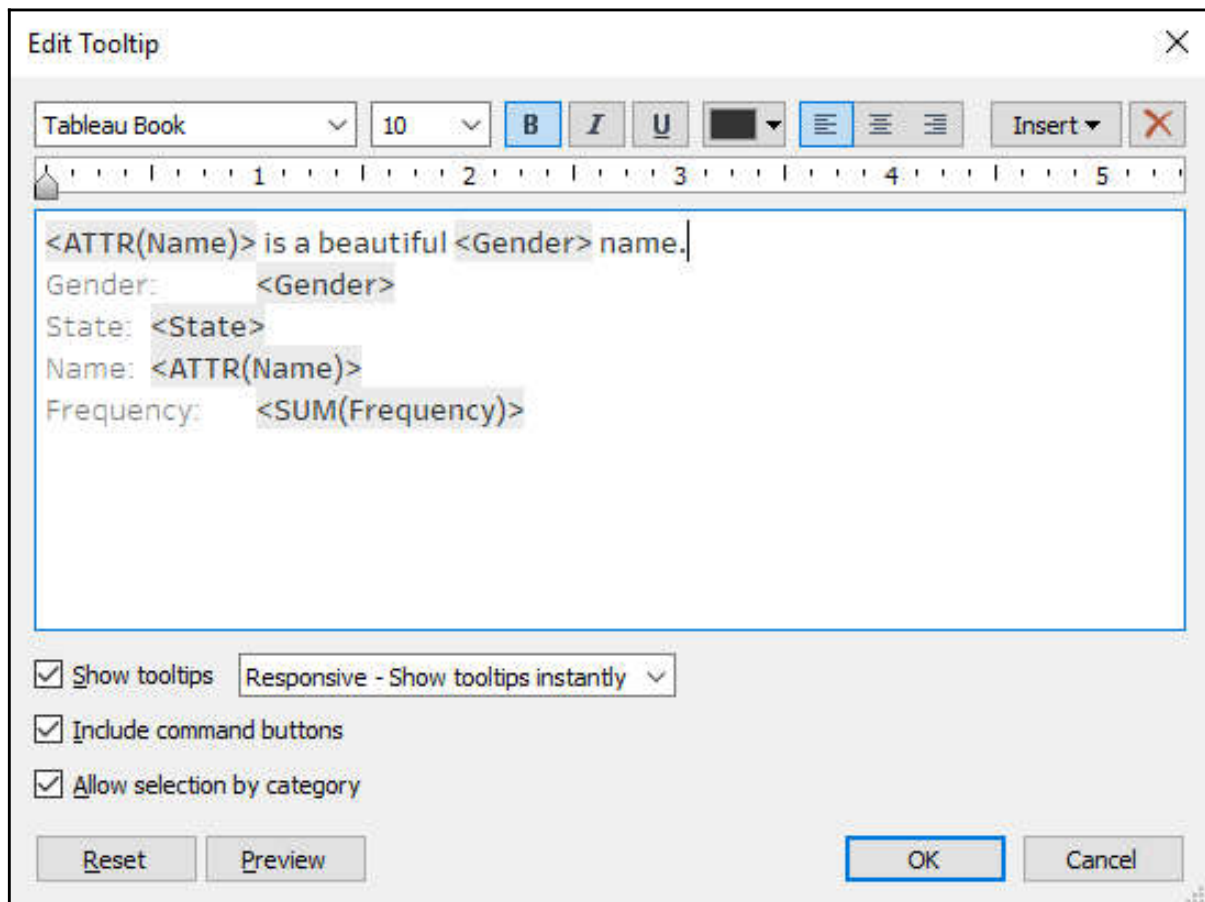
General Wildcard Condition Top

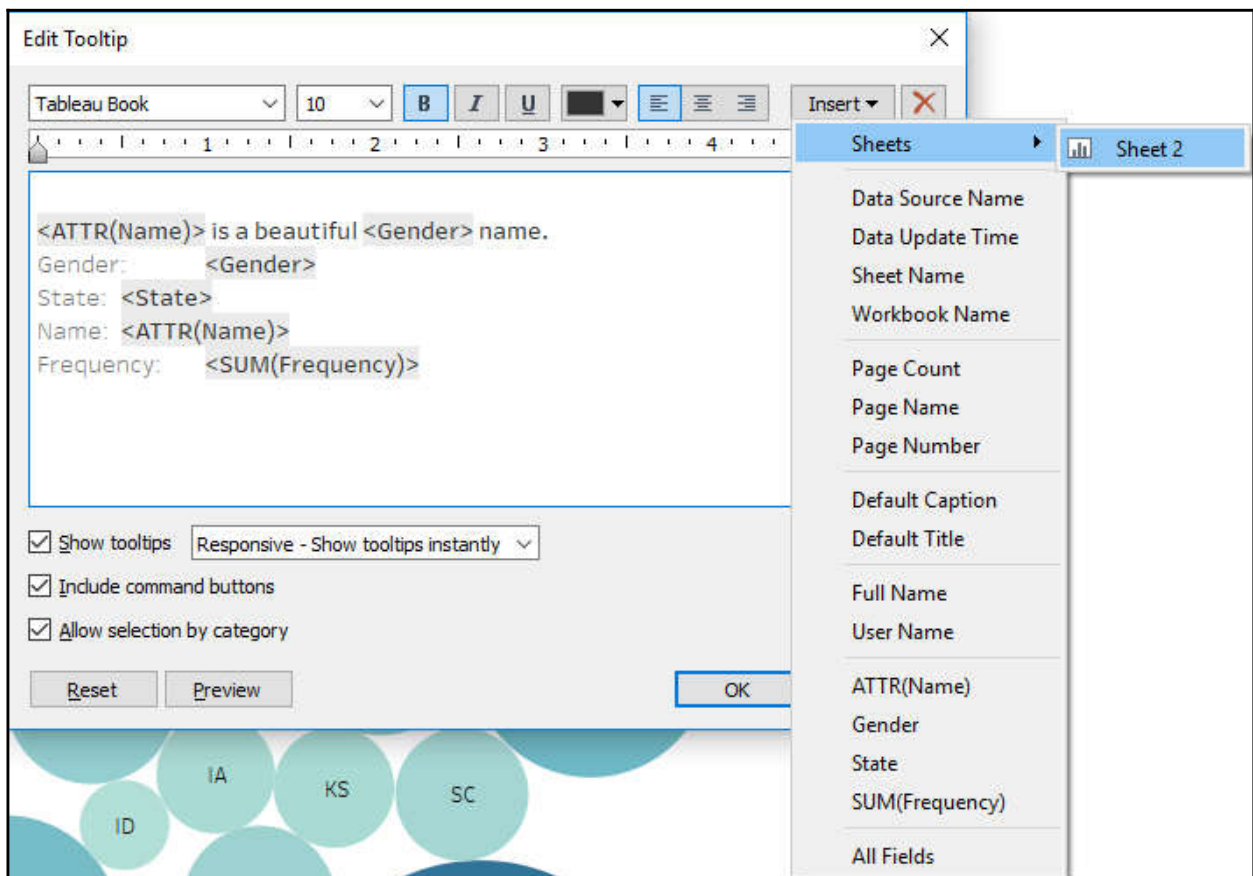
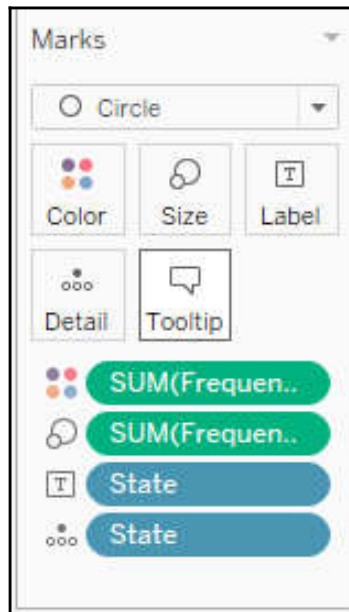
Select from list Custom value list Use all ☰

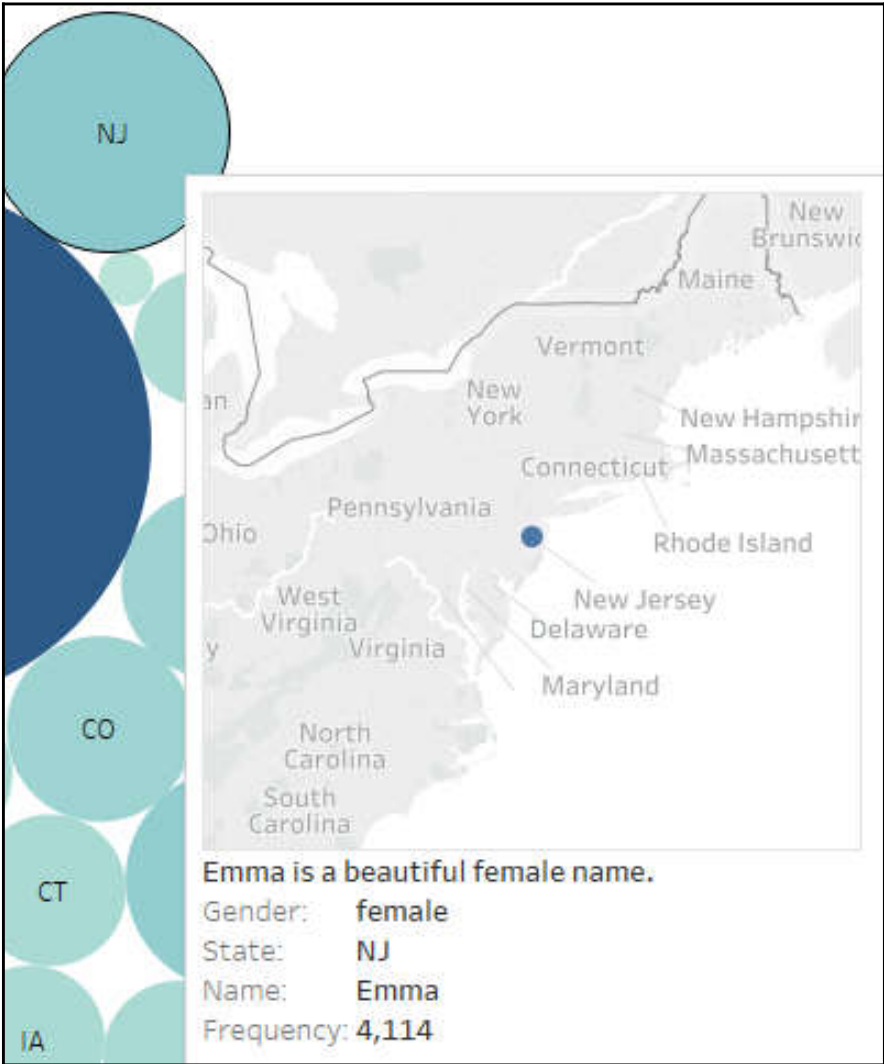
emma ✕

- Emma
- Emmanuel
- Gemma
- Aaliyah
- Aarav
- Aaron
- Abby
- Abel

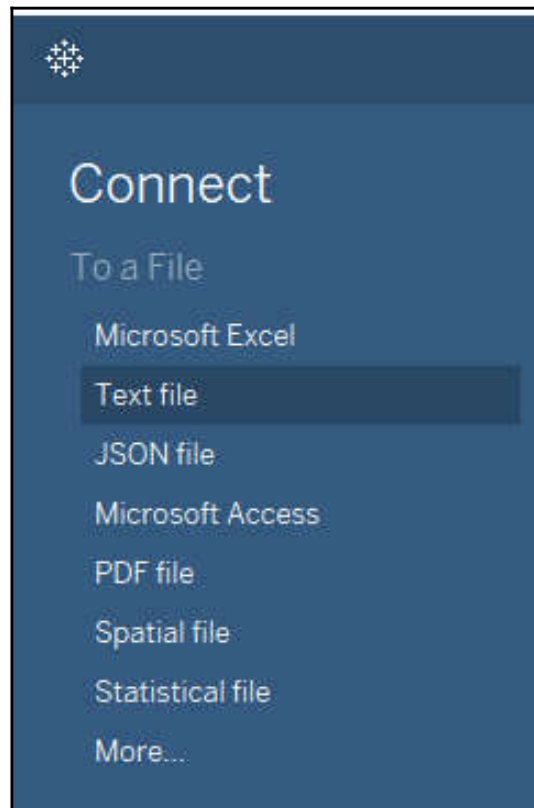
The image shows the 'Edit Tooltip' dialog box in Tableau. The dialog has a title bar with a close button (X). Below the title bar is a toolbar with a dropdown menu set to 'Tableau Book', a font size dropdown set to '10', and buttons for Bold (B), Italic (I), Underline (U), a color picker, and three bullet point icons. An 'Insert' dropdown menu is open, showing a list of fields: 'Data Source Name', 'Data Update Time', 'Sheet Name', 'Workbook Name', 'Page Count', 'Page Name', 'Page Number', 'Default Caption', 'Default Title', 'Full Name', 'User Name', 'ATTR(Name)', 'Gender', 'State', 'SUM(Frequency)', and 'All Fields'. The 'ATTR(Name)' option is highlighted in blue. The main text area of the dialog contains the following tooltip text: 'Gender: <Gender>', 'State: <State>', 'Name: <ATTR(Name)>', and 'Frequency: <SUM(Frequency)>'. Below the text area are three checked checkboxes: 'Show tooltips' (with a dropdown set to 'Responsive - Show tooltips instantly'), 'Include command buttons', and 'Allow selection by category'. At the bottom are 'Reset', 'Preview', and 'OK' buttons. The background of the window shows a pattern of teal circles with state abbreviations: IA, KS, SC, ID, MN.







Chapter 2: Data Manipulation



Public_Schools_1
Text File

Public_Schools_1.csv

Files

Use Data Interpreter
Data Interpreter might be able to clean your Text File workbook.


- Internet_sati...by_region.csv
- Public_Schools_1.csv
- Public_Schools_2.csv

Public_Schools_1+
Public_Schools_1.csv — Public_Schools_2.csv





Join

Inner	Left	Right	Full Outer
Data Source		Public_Schools_2.csv	
<i>Add new join clause</i>			

Public_Schools_1+

Public_Schools_1.csv —  — Public_Schools_2.csv


Join ✕

 Inner	 Left	 Right	 Full Outer
---	--	---	--





Data Source		Public_Schools_2.csv
Objectid 1	=	Shool ID
<i>Add new join clause</i>		

#	#	#	Abc	Abc	Public_Schools_1...	Public_Schools_1...	#	#
Public_Schools_1.csv	Public_Schools_1...	Public_Schools_1...	Public_Schools_1.csv	Public_Schools_1.csv	Public_Schools_1...	Public_Schools_1...	Public_Schools_1.csv	Public_School...
Objectid 1	Objectid	Bldg Id	Bldg Name	Address	City	Zipcode	Csp Sch Id	Sch Id
1	1	1	Guild Bldg	195 Leyden Street	East Boston	02128	4061	4061
2	2	3	Kennedy, P Bldg	343 Saratoga Street	East Boston	02128	4541	4541
3	3	4	Otis Bldg	218 Marion Street	East Boston	02128	4322	4322
4	4	6	Odonnell Bldg	33 Trenton Street	East Boston	02128	4543	4543
5	5	7	East Boston High Bldg	86 White Street	East Boston	02128	1070	1070
6	6	8	Umana / Barnes Bldg	312 Border Street	East Boston	02128	4323	4323
7	7	10	East Boston Eec Bldg	135 Gove Street	East Boston	02128	4450	4450
8	8	11	Mckay Bldg	122 Cottage Street	East Boston	02128	4360	4360
9	9	12	Adams Bldg	165 Webster Street	East Boston	02128	4361	4361
10	10	13	Harvard-Kent	50 Bunker Hill Street	Charlestown	02129	4280	4280
11	11	14	Charlestown High Bld...	240 Medford Street	Charlestown	02129	1050	1050
12	12	15	Edwards Bldg	28 Walker Street	Charlestown	02129	2010	2010
13	13	16	Warren-Prescott Bldg	50 School Street	Charlestown	02129	4283	4283


Public_Schools_1+

Public_Schools_1.csv  Public_Schools_2.csv





Join ✕

 Inner	 Left	 Right	 Full Outer
Data Source		Public_Schools_2.csv	
Objectid 1	=	Shool ID	
<i>Add new join clause</i>			

Public_Schools_1+

Public_Schools_1.csv —  — Public_Schools_2.csv

Join ✕

 Inner	 Left	 Right	 Full Outer
Data Source			Public_Schools_2.csv
Objectid 1	=	Shool ID	
<i>Add new join clause</i>			

Public_Schools_1+

Public_Schools_1.csv Public_Schools_2.csv

Join

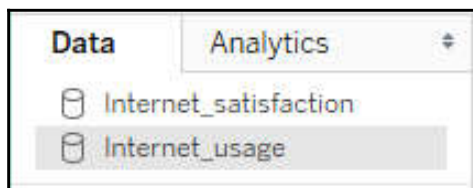
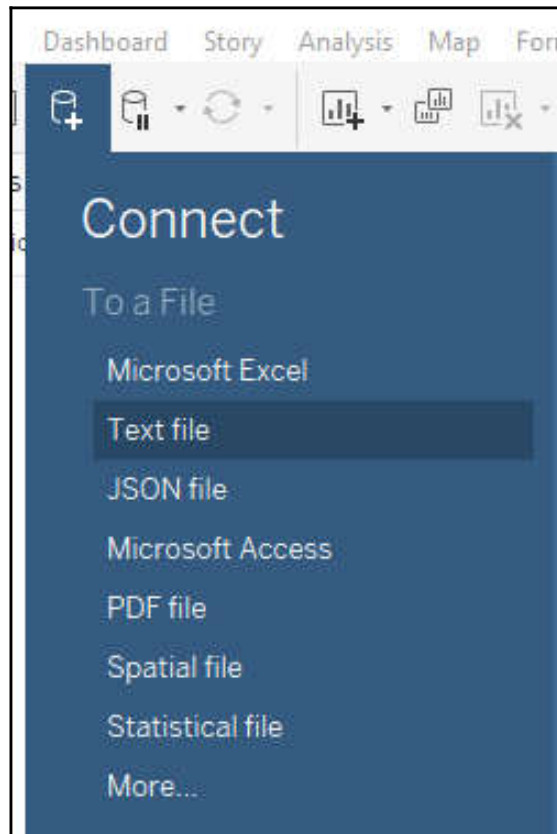
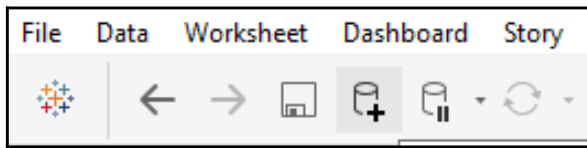
Inner Left Right Full Outer

Data Source		Public_Schools_2.csv
Objectid 1	=	Shool ID
<i>Add new join clause</i>		

File Data Worksheet Dashboard Story

- New Data Source Ctrl+D
- Paste Ctrl+V
- Refresh All Extracts...
- Edit Relationships...
- Replace Data Source...
- Tableau Data Server
- Internet_satisfaction

Marks



Marks

Automatic

Color Size Text

Detail Tooltip

SUM(Satisf..

	ADSL	Cable	wireless internet
	1,507	1,233	92

- Filter...
- Show Filter
- Format...
- Include in Tooltip
- Dimension
- Attribute
- Measure (Sum)
 - Sum
 - Average
 - Median
 - Count
 - Count (Distinct)
- Discrete
- Continuous
- Edit in Shelf

Pages

Columns **HH internet type**

Rows

Filters

Sheet 1

HH internet type

	ADSL	Cable	Wireless internet
	3.9554	4.0693	4.0000

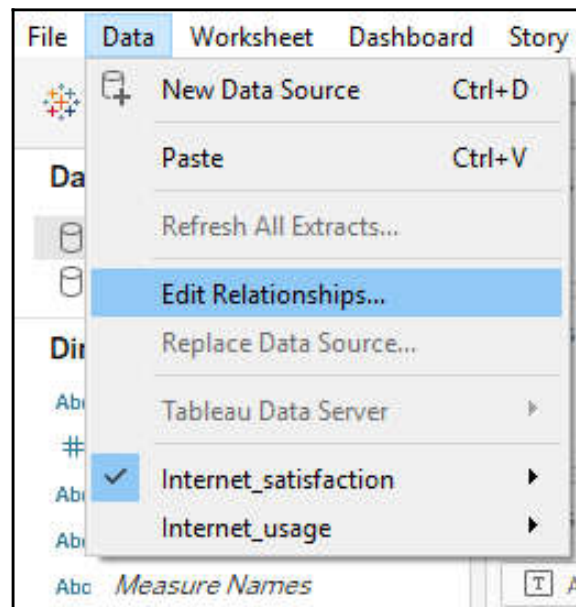
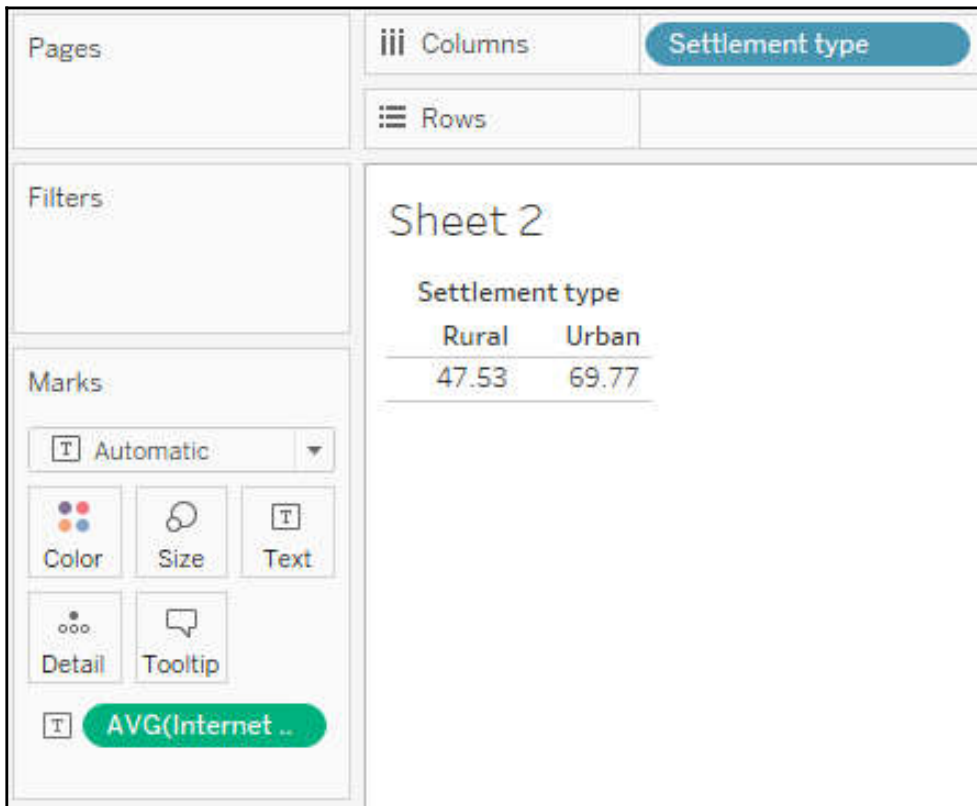
Marks

Automatic

Color Size Text

Detail Tooltip

AVG(Satisfacti..



Relationships

Relationships determine how data from secondary data sources are joined with primary data sources.

Primary data source:
 Internet_satisfaction

Secondary data source:
 Automatic Custom

Internet_usage	Region	Area

Add... Edit... Remove

OK Cancel

Add/Edit Field Mapping

Primary data source field:
 Enter search text
 HH internet type
 Id
 Main provider
 Region

Secondary data source field:
 Enter search text
 Area
 Settlement type

OK Cancel

Relationships

Relationships determine how data from secondary data sources are joined with primary data sources.

Primary data source:
Internet_satisfaction

Secondary data source:
 Automatic Custom

Region	Area

Buttons: Add... Edit... Remove

Buttons: OK Cancel

Pages

Columns

Rows

Area

Filters

Marks

Automatic

Color Size Text

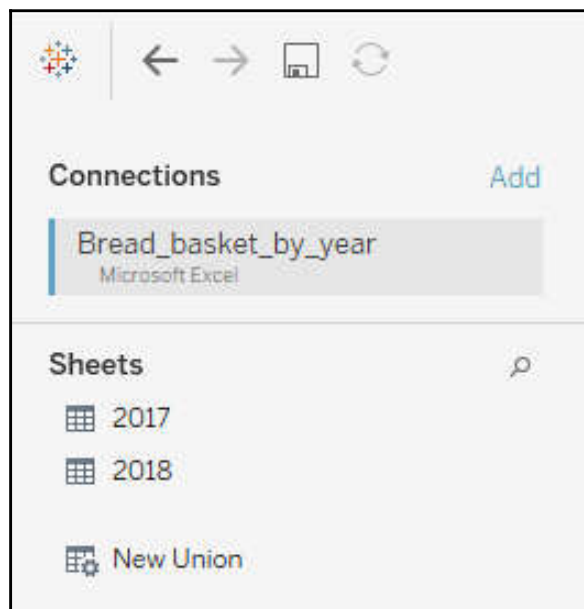
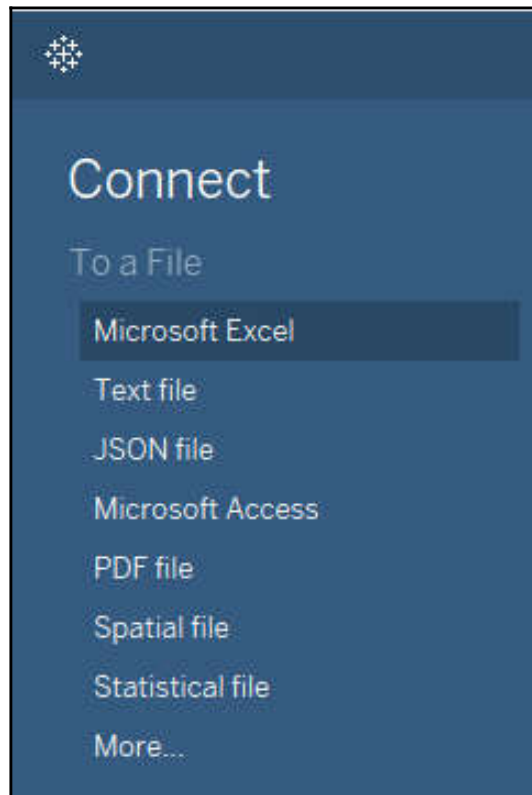
Detail Tooltip

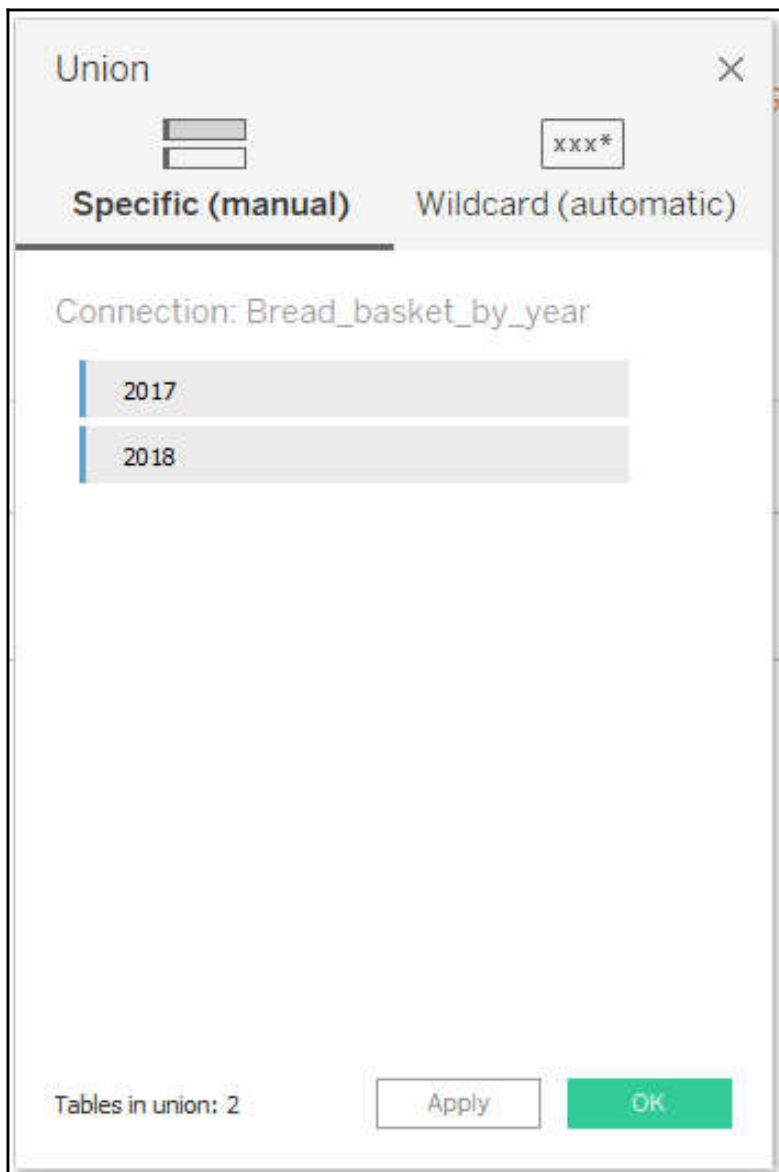
AVG(Internet ..)

AVG(Satisf..)





Sheet 1

Area	
Belgrade	60.300 3.99620
Central Serbia	57.950 4.00738
Vojvodina	57.700 4.01734








Sort fields Data source order

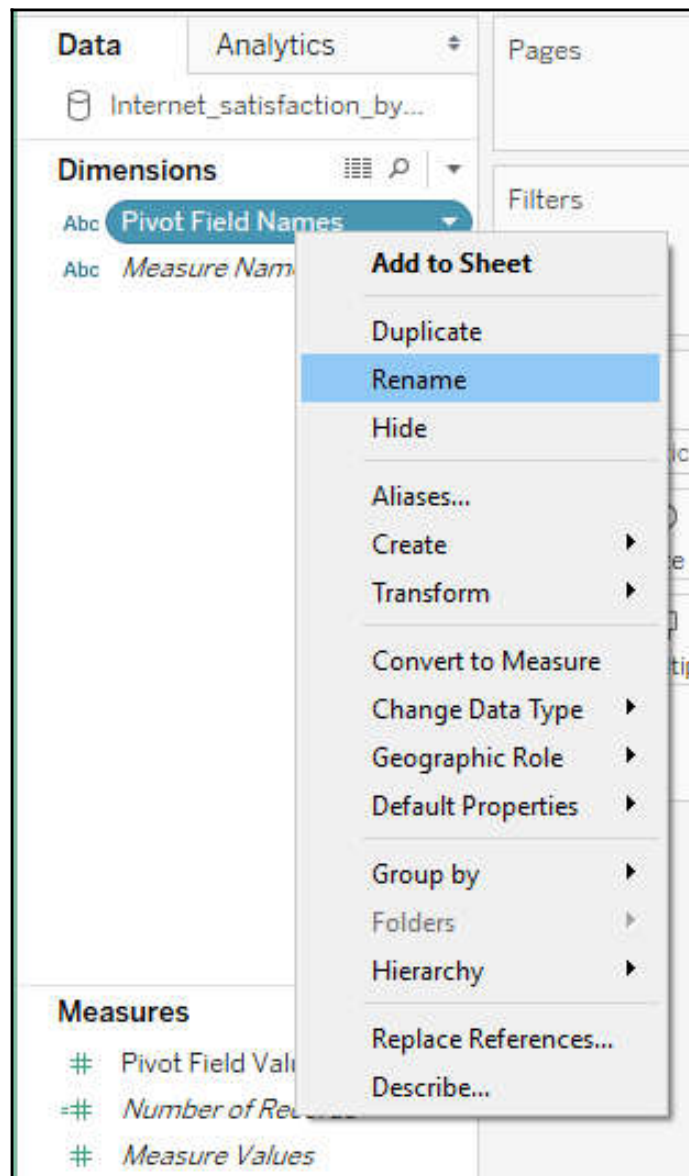
 Union Date	 Union Time	# Union Transaction	Abc Union Item	Abc Union Sheet	Abc Union Table Name	
10/30/2017	12/30/1899 9:58:11 AM		1 Bread	2017	2017	
10/30/2017	12/30/1899 10:05:34 ...		2 Scandinavian	2017	2017	
10/30/2017	12/30/1899 10:05:34 ...		2 Scandinavian	2017	2017	
10/30/2017	12/30/1899 10:07:57 ...		3 Hot chocolate	2017	2017	
10/30/2017	12/30/1899 10:07:57 ...		3 Jam	2017	2017	
10/30/2017	12/30/1899 10:07:57 ...		3 Cookies	2017	2017	
10/30/2017	12/30/1899 10:08:41 ...		4 Muffin	2017	2017	
10/30/2017	12/30/1899 10:13:03 ...		5 Coffee	2017	2017	

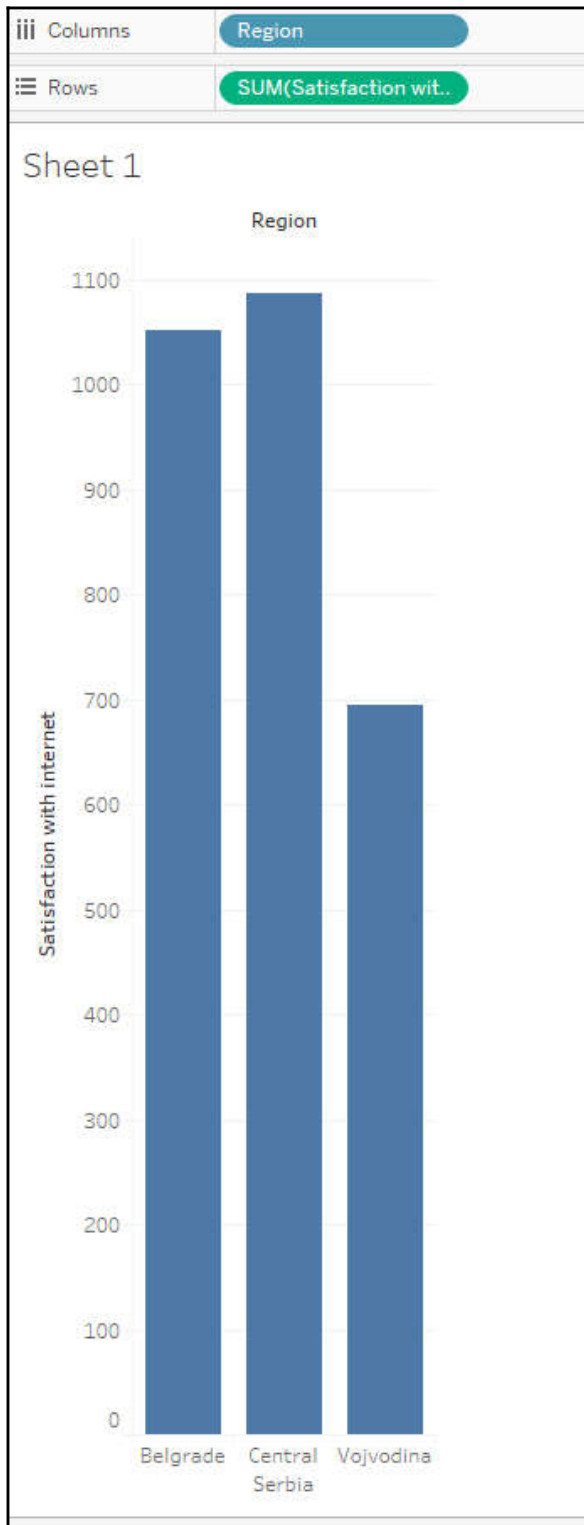
Sort fields Data source order

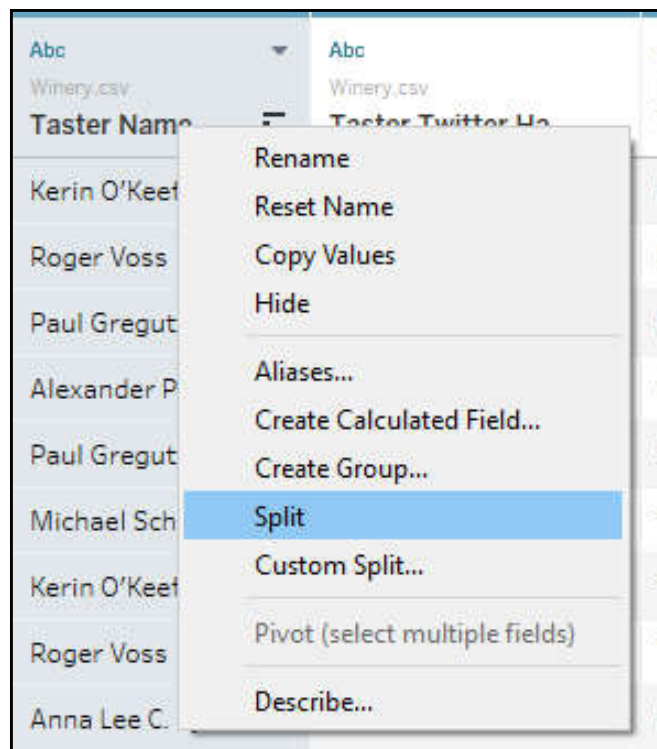
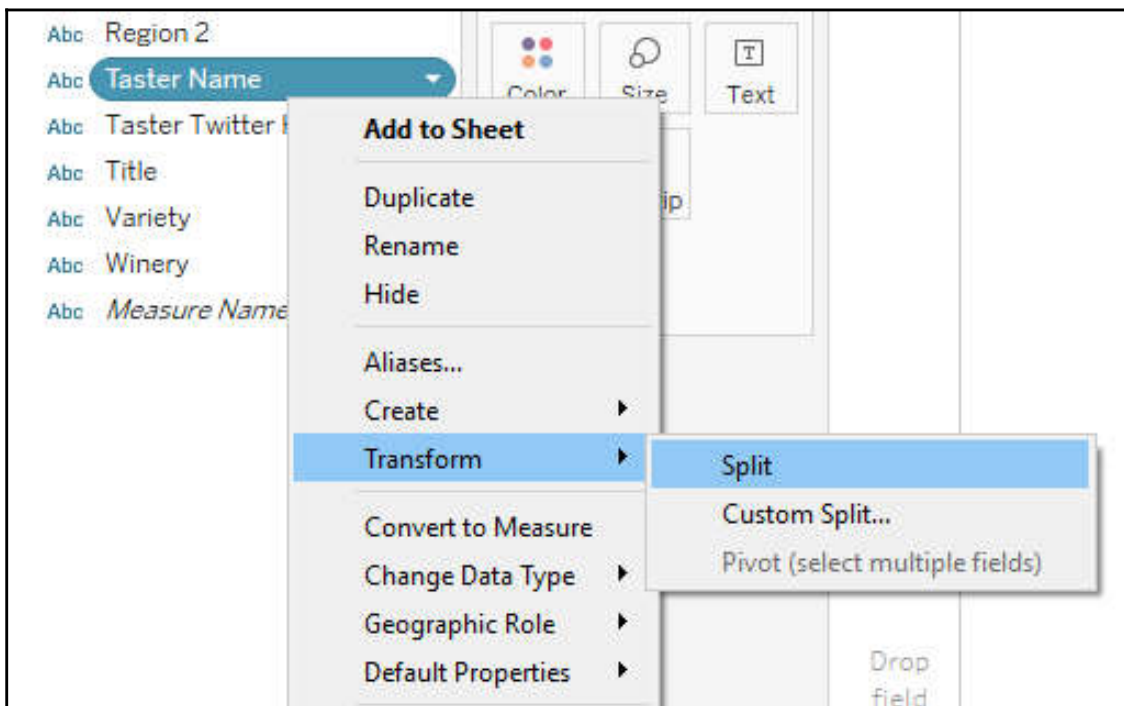
# Internet_satisfacti... Belgrade	# internet_satisfaction_by_... Central Serbia	# Internet_satisfactio... Vojvodina	
5	5		
4	2		
3	3		
5	3		
4	4		
5	5		5
4	3		3
4	5		3
4	3		5
2	4		3

- Rename
- Copy Values
- Hide
- Create Calculated Field...
- Pivot**
- Merge Mismatched Fields

  Sort fields		Data source order 
Abc <small>Pivot</small> Pivot Field Names	# <small>Pivot</small> Pivot Field Values	
Belgrade		5
Belgrade		4
Belgrade		3
Belgrade		5
Belgrade		4
Belgrade		5
Belgrade		4
Belgrade		4
Belgrade		4
Belgrade		2
Belgrade		5
Belgrade		5
Belgrade		4










Dimensions



▼  country, province

 Country

 Province

Abc Description

Abc Designation

Abc Region 1

Abc Region 2

Abc Taster Name

Abc Taster Name - Split 1

Abc Taster Name - Split 2

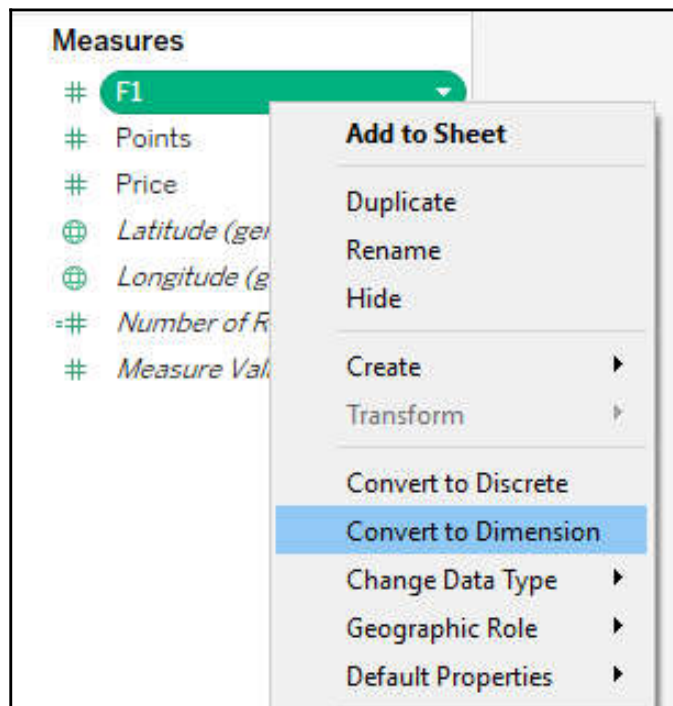
Abc Taster Twitter Handle

Abc Title

Abc Variety

Abc Winery

Abc *Measure Names*



The image shows a screenshot of the Tableau interface, specifically the Dimensions pane. The pane is titled "Dimensions" and contains a list of fields. The field "Taster Name - Split" is selected, and a context menu is open over it. The context menu includes options such as "Add to Sheet", "Show Filter", "Cut", "Copy", "Edit...", "Duplicate", "Rename", "Hide", and "Delete". The "Rename" option is highlighted in blue. To the right of the Dimensions pane, the Marks card is visible, showing "Automatic" and "Color" and "Size" options.

Dimensions

- country, province
 - Country
 - Province
- Description
- Designation
- Region 1
- Region 2
- Taster Name
- Taster Name - Split**
- Taster Name - Split
- Taster Twitter Hand
- Title
- Variety
- Winery
- Measure Names

Filters

Marks

Automatic

Color

Size

Add to Sheet

- Show Filter
- Cut
- Copy
- Edit...
- Duplicate
- Rename**
- Hide
- Delete

Dimensions   

- ▼  country, province
 -  Country
 -  Province
- Abc Description
- Abc Designation
- Abc Region 1
- Abc Region 2
- Abc Taster Name
- Abc
- Abc Taster Name - Split 2
- Abc Taster Twitter Handle
- Abc Title
- Abc Variety
- Abc Winery
- Abc *Measure Names*

-Abc 

Calculation

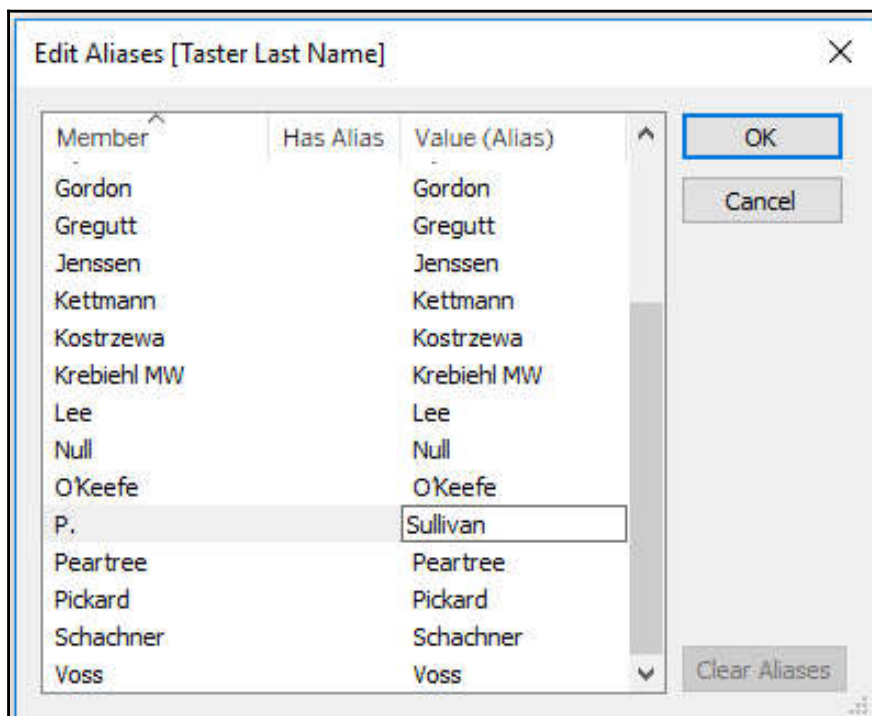
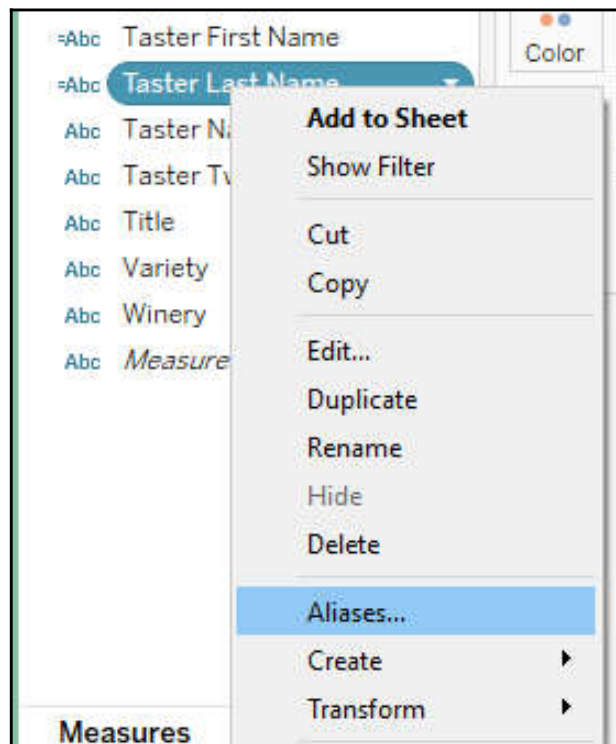


-Abc 

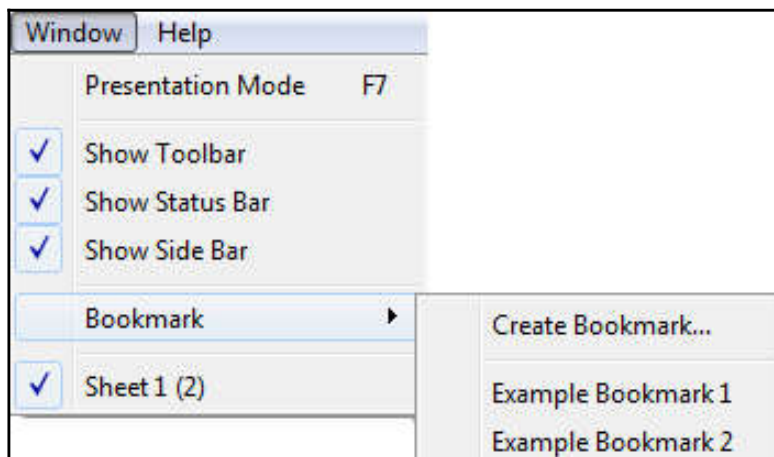
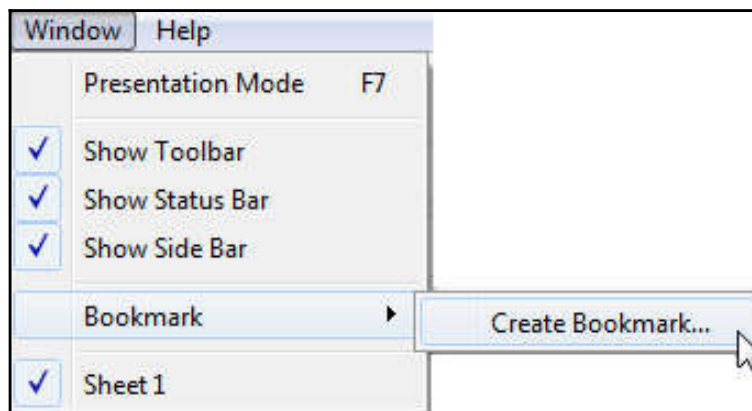
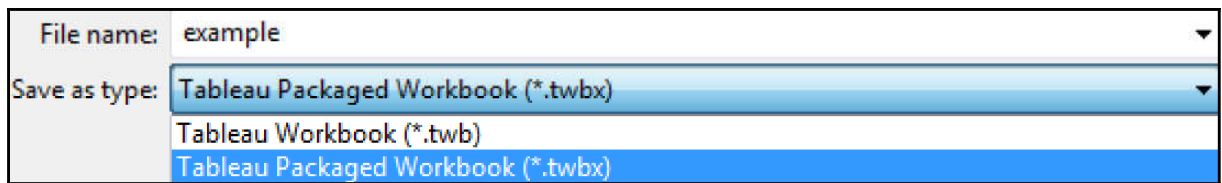
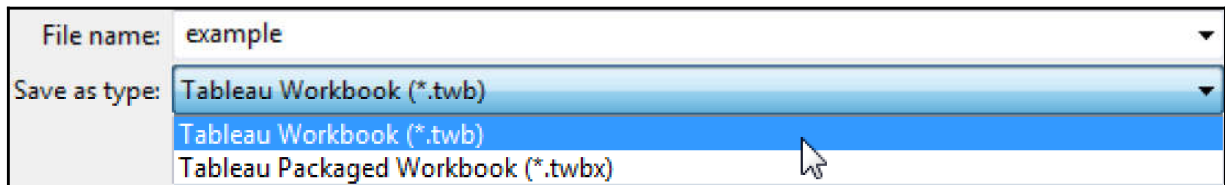
Calculation

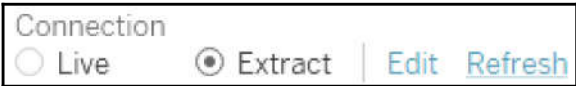
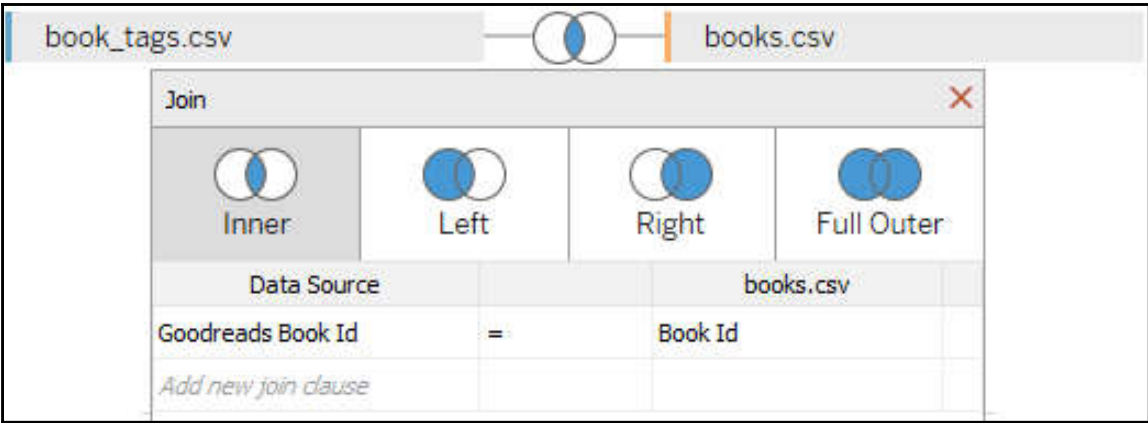
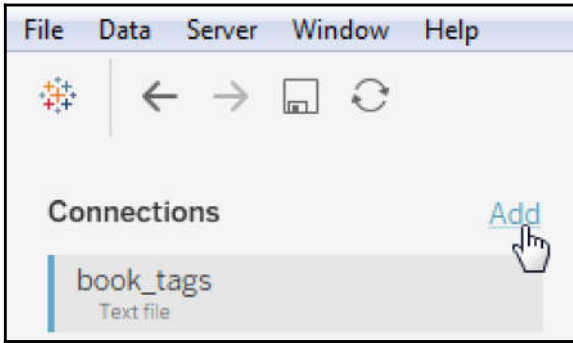
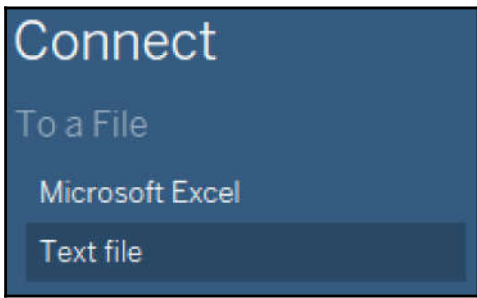


iii Columns		
Rows		
Taster Name		Taster Last Name
Sheet 1		
Taster Name	Taster Last ..	
Null	Null	Abc
Alexander Peartree	Peartree	Abc
Anna Lee C. Iijima	Lee	Abc
Anne Kriebiehl MW	Kriebiehl MW	Abc
Carrie Dykes	Dykes	Abc
Christina Pickard	Pickard	Abc
Fiona Adams	Adams	Abc
Jeff Jenssen	Jenssen	Abc
Jim Gordon	Gordon	Abc
Joe Czerwinski	Czerwinski	Abc
Kerin O'Keefe	O'Keefe	Abc
Lauren Buzzeo	Buzzeo	Abc
Matt Kettmann	Kettmann	Abc
Michael Schachner	Schachner	Abc
Mike DeSimone	DeSimone	Abc
Paul Gregutt	Gregutt	Abc
Roger Voss	Voss	Abc
Sean P. Sullivan	P.	Abc
Susan Kostrzewa	Kostrzewa	Abc
Virginie Boone	Boone	Abc




Chapter 3: Tableau Extracts






File name: ▼

Save as type: ▼

 Hide Folders

Connection

Live Extract | [Edit](#)

Extract will include all data. 

Specify how to store data in the extract:

Data Storage

Single table Multiple tables

Store data in your extract together using a single table. [Learn more](#)

Use this option if you need to use extract filters, aggregation, top N, etc.

Filters (optional)

Filter	Details
--------	---------

Aggregation

Aggregate data for visible dimensions

Roll up dates to

Number of Rows

All rows

Incremental refresh

Top: rows

Sample: rows ▼

[History...](#) [Hide All Unused Fields](#) [OK](#) [Cancel](#)

Connection

Live Extract | [Edit](#) [Refresh](#)

Connection

Live Extract | [Edit](#)

Extract will include all data.

Number of Rows

All rows

Number of Rows

All rows

Incremental refresh

Identify new rows using column:

All rows will be added. [Full Refresh](#)

[History...](#) [Hide All Unused Fields](#) [OK](#) [Cancel](#)

[Data Source](#) Sheet 1

Columns **MAX(Date)**

Rows

Sheet 1

Max. Date
10/31/2017
Abc

- Filter...
- Show Filter
- Show Highlighter
- Sort...
- Format...
- Show Header
- Include in Tooltip
- Year 2015
- Quarter Q2
- Month May
- Day 8
- More ▶
- Year 2015
- Quarter Q2 2015
- Month May 2015
- Week Number Week 5, 2015
- Day May 8, 2015
- More ▶
- Exact Date
- Attribute
- Measure (Maximum) ▶
- Discrete
- Continuous
- Edit in Shelf
- Ignore in Table Calculations
- Remove

- Count
- Count (Distinct)
- Minimum
- Maximum

Connection
 Live Extract | [Edit](#) [Refresh](#)

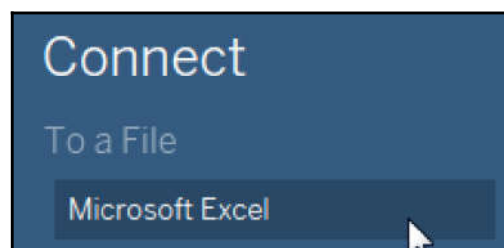
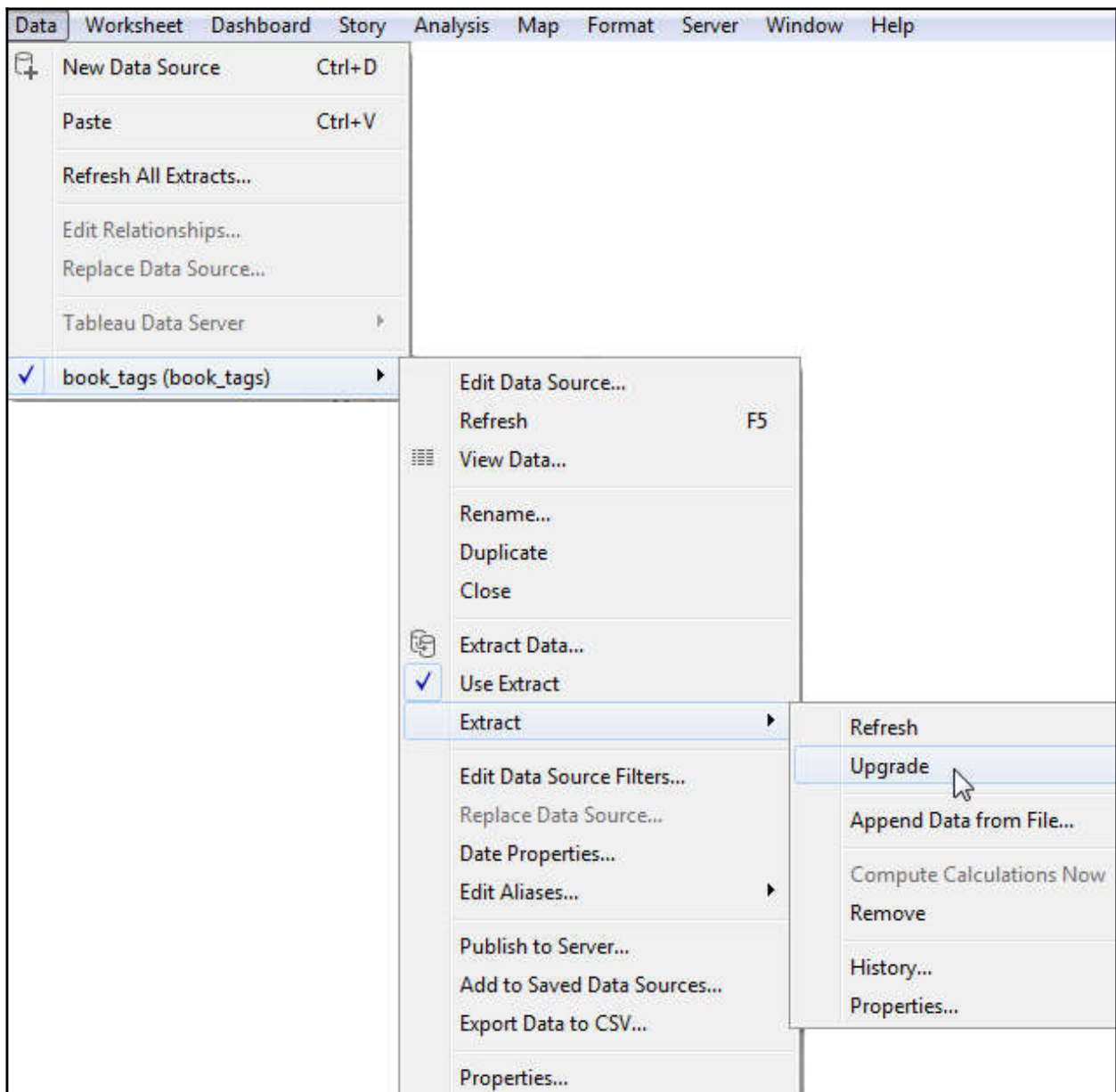
Max. Date
11/30/2017
Abc

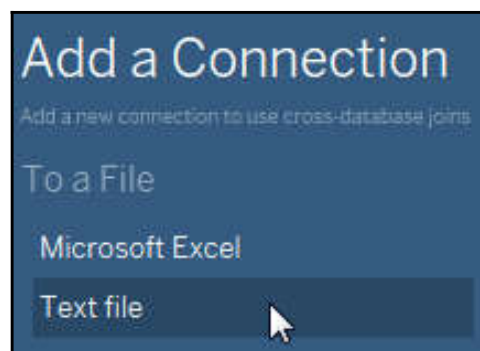
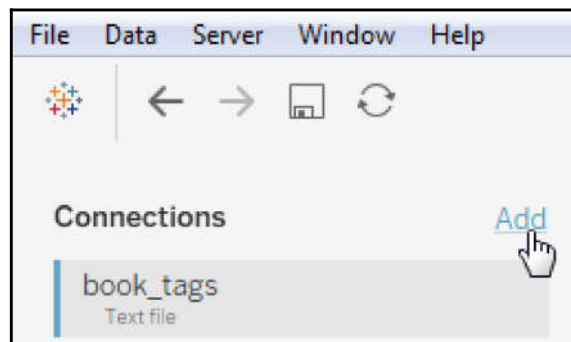
[History...](#) [Hide All Unused Fields](#) [OK](#) [Cancel](#)

Extract History ⌵

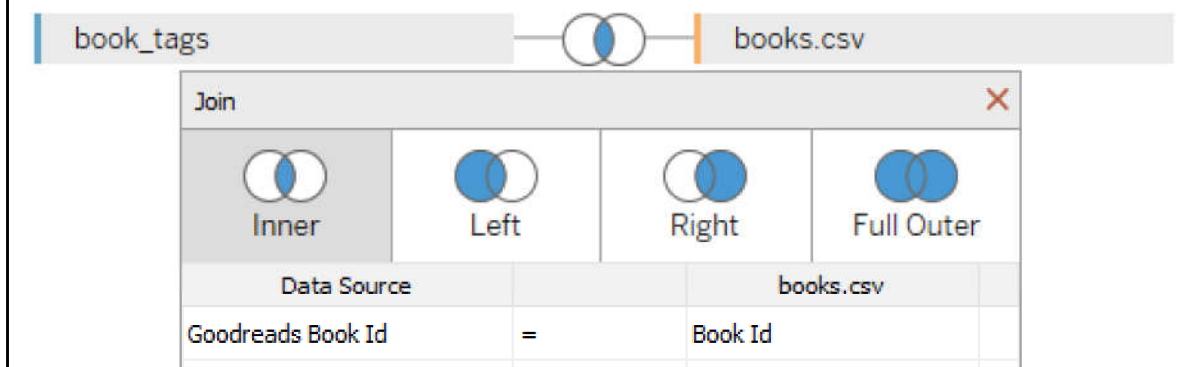
Time	Action	Rows	Source
1/13/2019 3:14:37 PM	Full refresh	174960	
1/13/2019 3:24:44 PM	Incremental refresh	17280	

[Clear History](#) [Close](#)





book_tags+ (Multiple Connections)



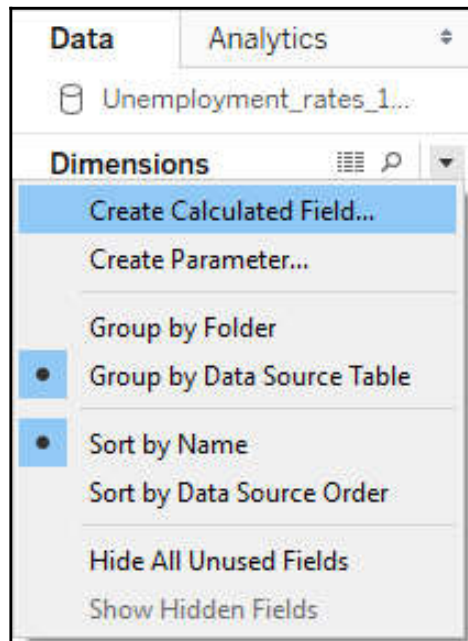
book_tags+ (Multiple Connections)

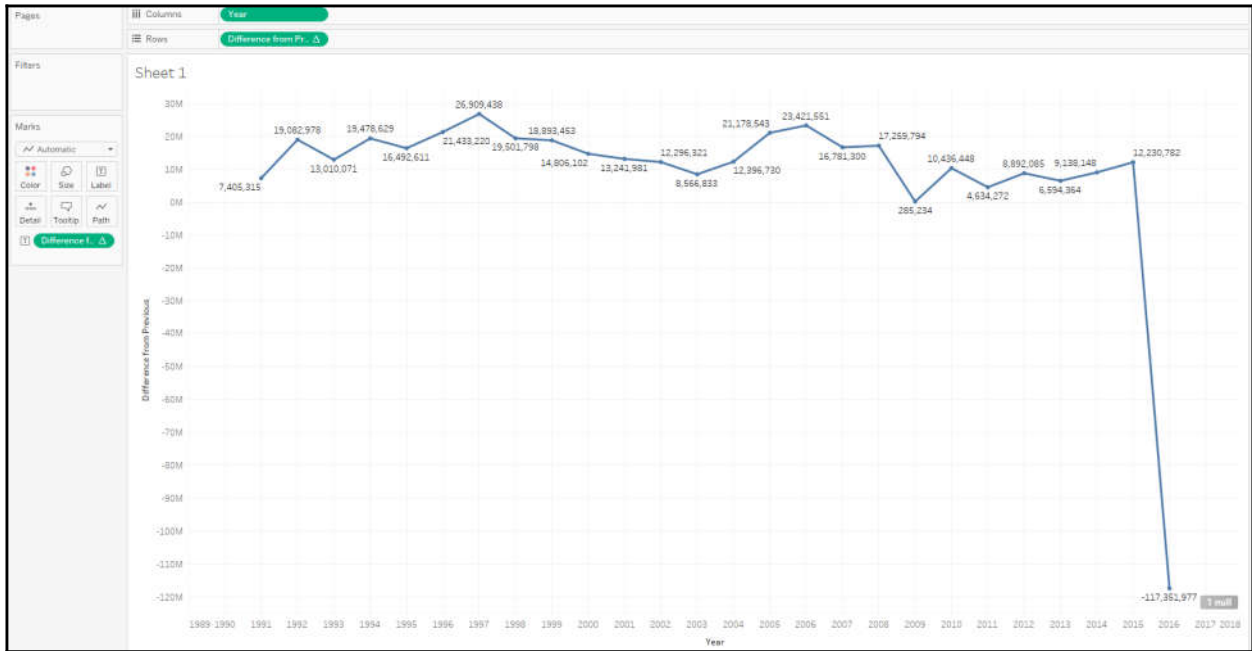


Sort fields Data source order

#	#	#	#	#	#	#
booktags	booktags	booktags	books.csv	books.csv	books.csv	books.csv
Goodreads Book Id	Tag Id	Count	Id	Book Id	Best Book Id	Work Id

Chapter 4: Tableau Desktop Advanced Calculations





Area	Year	Month	Civilian Labor Force	Employment	Unemployment	Unemployment Ra...	Difference from pr...
Anniston-Oxford-Jack...	1990	1	51,485	48,307	3,178	6.2000	Undefined
Auburn-Opelika, AL M...	1990	1	44,415	41,247	3,168	7.1000	Undefined
Birmingham-Hoover, ...	1990	1	457,612	433,590	24,022	5.2000	Undefined
Daphne-Fairhope-Fole...	1990	1	45,859	43,402	2,457	5.4000	Undefined
Decatur, AL MSA	1990	1	65,452	61,009	4,443	6.8000	Undefined
Dothan, AL MSA	1990	1	58,423	56,097	2,326	4.0000	Undefined
Florence-Muscle Shoa...	1990	1	61,752	57,486	4,266	6.9000	Undefined

Area	Year	Month	Civilian Labor Force	Employment	Unemployment	Unemployment Ra...	Difference from pr...	Calculated Labor Force
Anniston-Oxford-Jack...	1990	1	51,485	48,307	3,178	6.2000	Undefined	51,485
Auburn-Opelika, AL M...	1990	1	44,415	41,247	3,168	7.1000	Undefined	44,415
Birmingham-Hoover, ...	1990	1	457,612	433,590	24,022	5.2000	Undefined	457,612
Daphne-Fairhope-Fole...	1990	1	45,859	43,402	2,457	5.4000	Undefined	45,859
Decatur, AL MSA	1990	1	65,452	61,009	4,443	6.8000	Undefined	65,452
Dothan, AL MSA	1990	1	58,423	56,097	2,326	4.0000	Undefined	58,423

All ▼

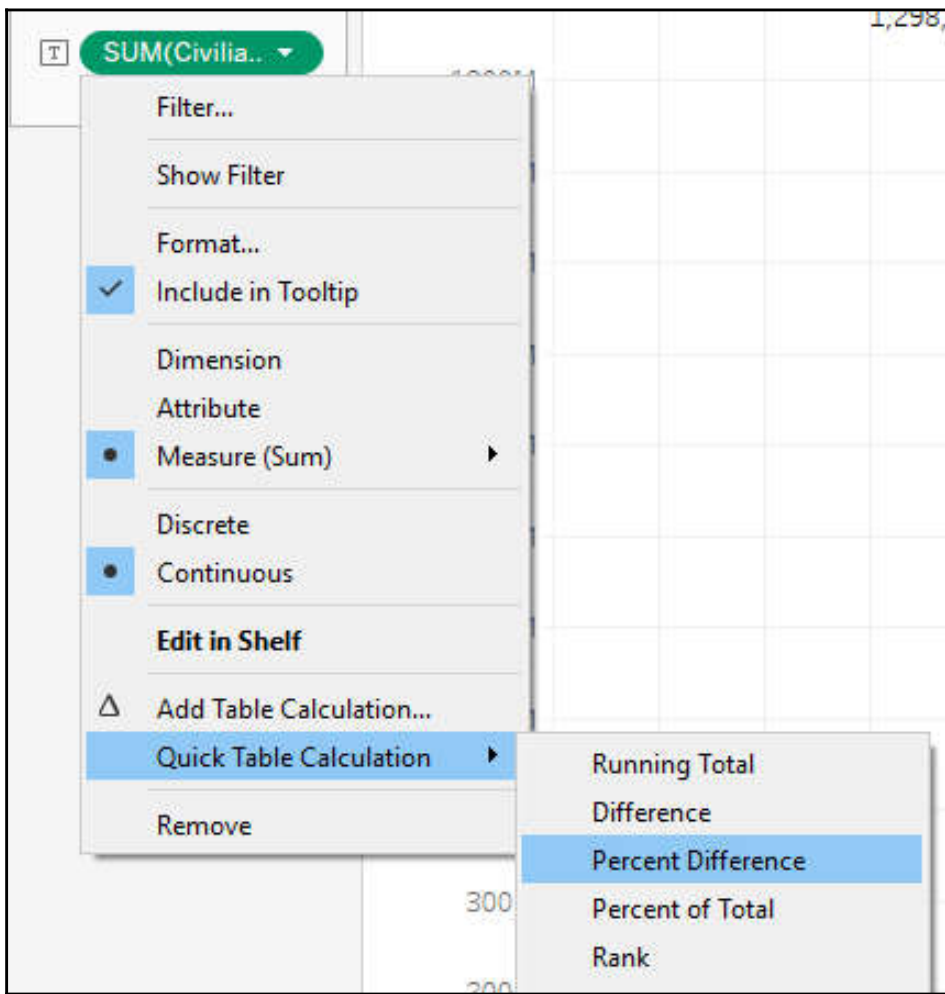
Enter search text

ABS
ACOS
AND
ASCII
ASIN
ATAN
ATAN2
ATTR
AVG
CASE
CEILING
CHAR

ABS (number)

Returns the absolute value of the given number.

Example: $\text{ABS}(-7) = 7$



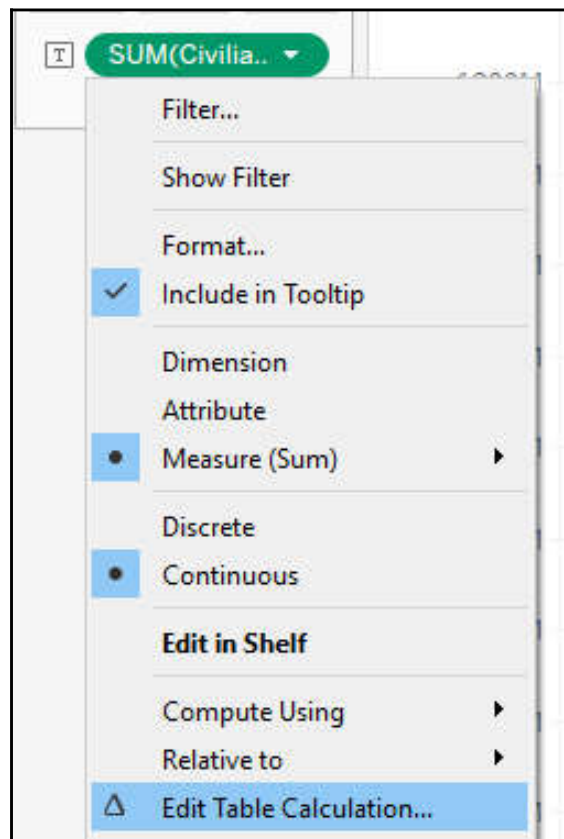


Table Calculation ✕

% Difference in Civilian Labor Force

Calculation Type

Percent Difference From ▼

Compute compounded rate

Compute Using

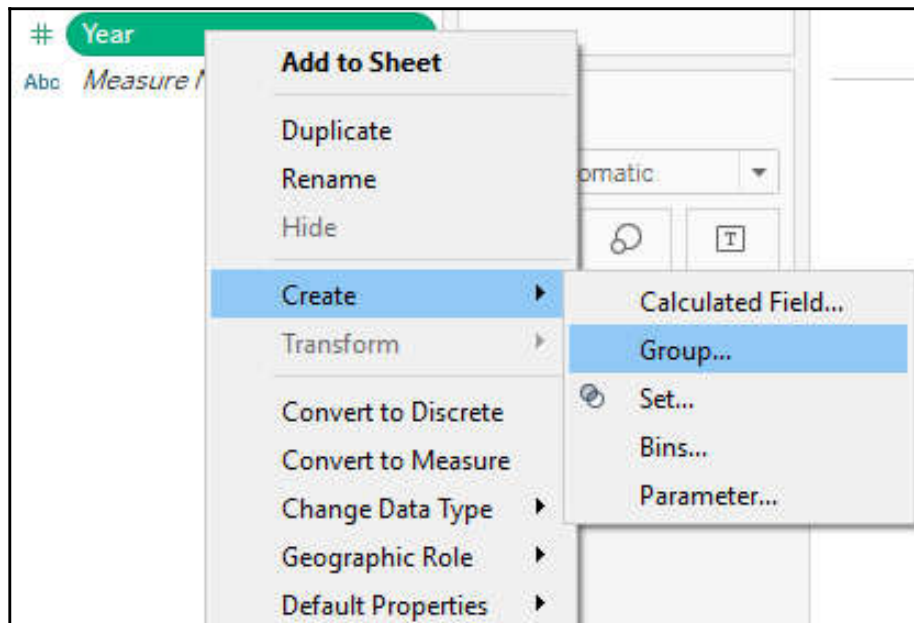
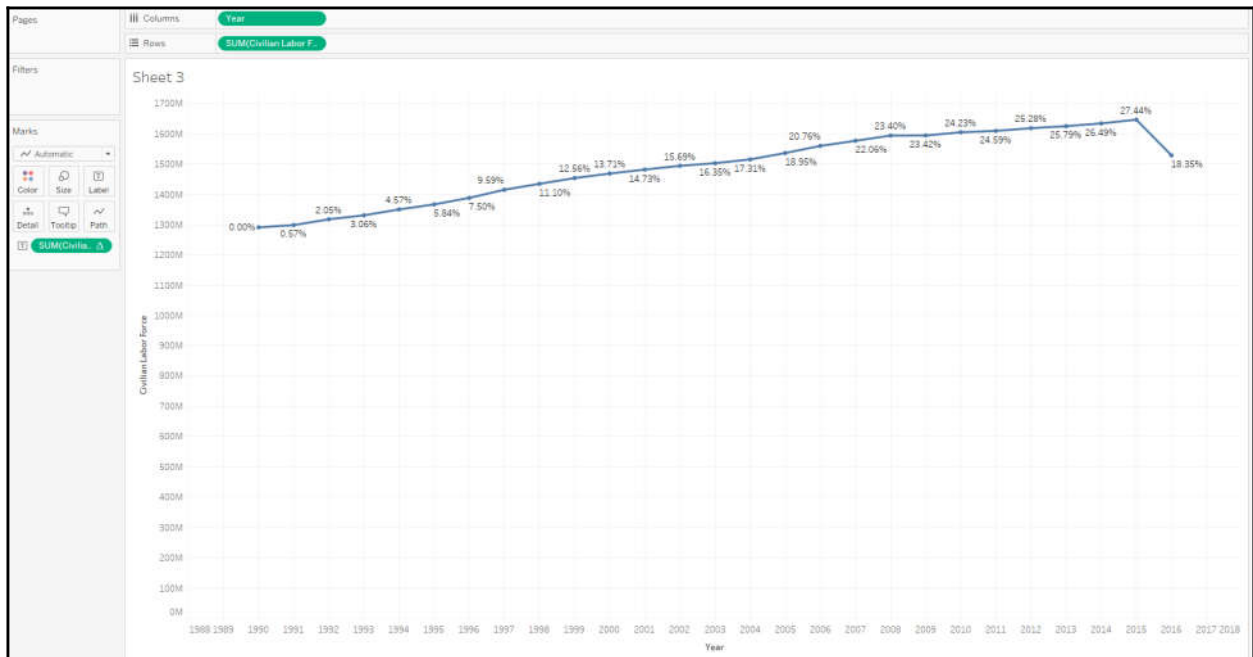
Table (across)
Cell
Specific Dimensions

Year

At the level ▼

Relative to First ▼

Show calculation assistance



Create Group [Year] ✕

Field Name:

Groups:

1990
1991
1992
1993
1994
1995
1996
1997
1998
1999 Group
2000
2001
2002
2003
2004

Show Add Location

Include 'Other'

Pages

Columns

Rows

Decade

Filters

Sheet 1

Decade

Decade	
1990s	272,370
2000s	306,085
2010s	319,582

Marks

Automatic

Color

Size

Text

Detail

Tooltip

AVG(Employm..)

Create Set ✕

Name:

General Condition Top

Select from list Custom value list Use all

Enter search text

- 1990
- 1991
- 1992
- 1993
- 1994
- 1995
- 1996
- 1997
- 1998
- 1999
- 2000
- 2001

Exclude

Summary

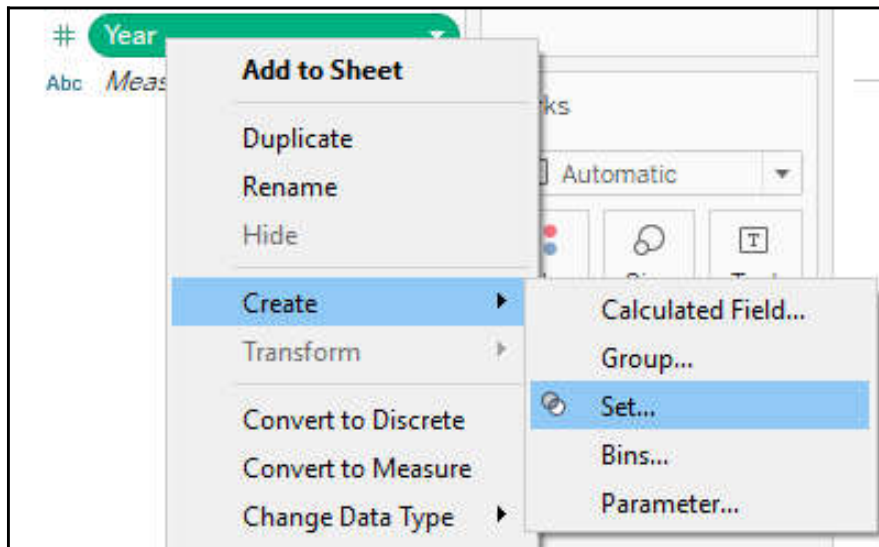
Field: [Year]

Selection: Selected 0 of 27 values

Wildcard: All

Condition: [None](#)

Limit: [None](#)



Create Set ✕

Name:

General Condition Top

Select from list Custom value list Use all

Enter search text

- 1990
- 1991
- 1992
- 1993
- 1994
- 1995
- 1996
- 1997
- 1998
- 1999
- 2000
- 2001

 Exclude

Summary

Field: [Year]
Selection: Selected 0 of 27 values
Wildcard: All
Condition: None
Limit: None

Create Set

Name: Above average employment years

General Condition Top

None

By field:

Employment Average

>= 297,027


Range of Values

Min: Load

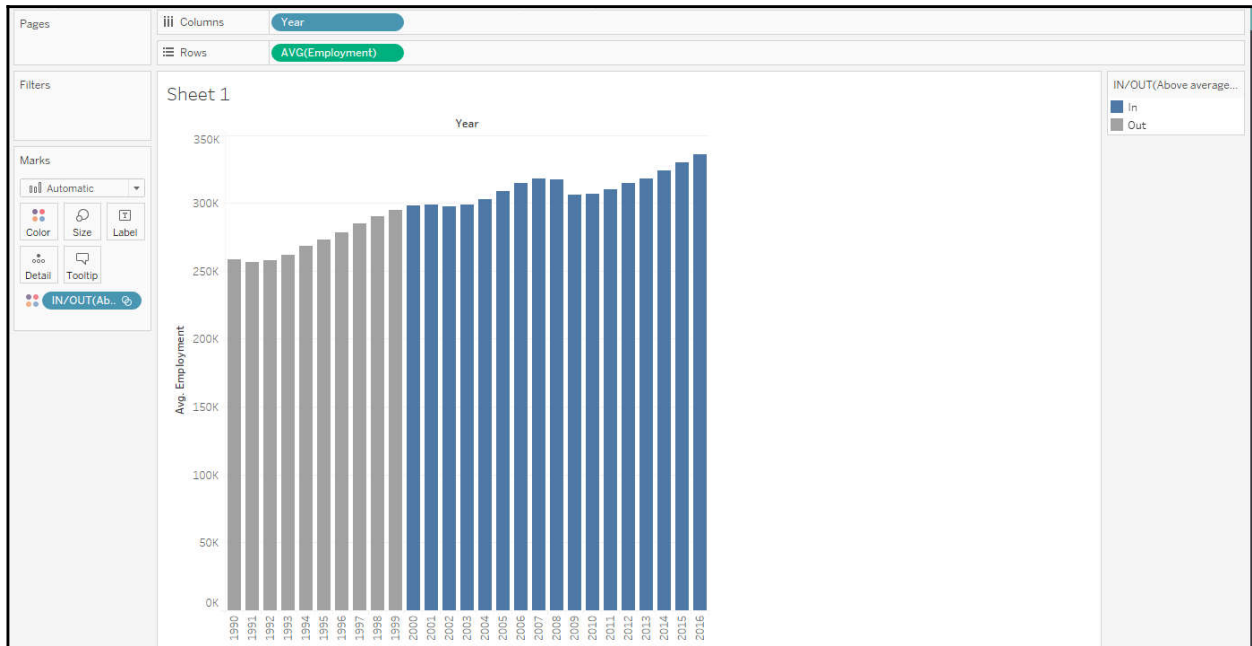
Max:

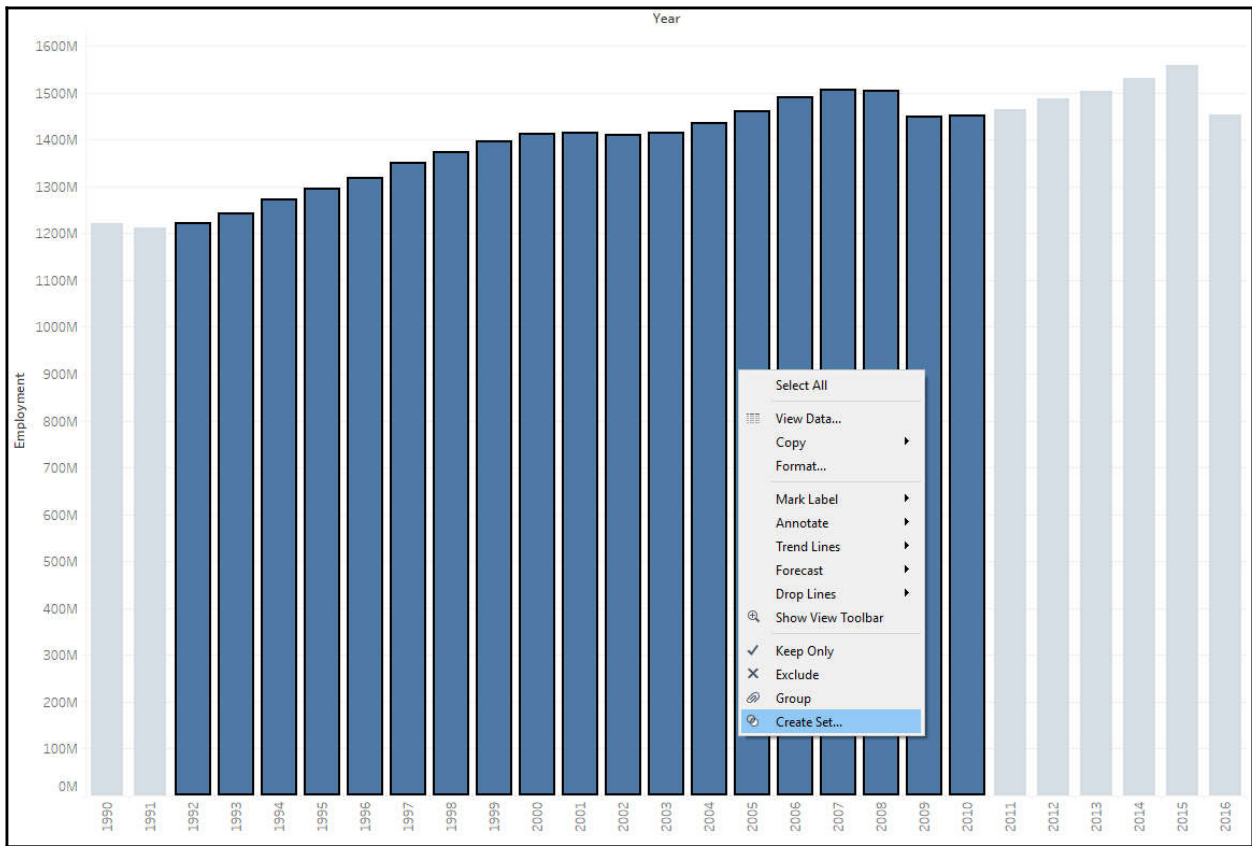
By formula:

Reset OK Cancel

10. A new section, **Sets**, has appeared in the **Data** pane, below **Measures**. It contains our new set, denoted by the set symbol . Drag and drop the set we created onto **Color** in the **Marks** label.
11. Drag and drop **Year** from **Dimensions** into the **Columns** shelf.

12. Right-click on the **Year** pill in the **Columns** shelf, and in the drop-down menu switch to **Discrete**.
13. Drag and drop **Employment** from **Measures** into the **Rows** shelf.
14. Hover over the **Employment** pill in the **Rows** shelf and click on the white arrow that appears on it.





Data | Analytics

Unemployment_rates_1...

Dimensions

- Create Calculated Field...
- Create Parameter...**
- Group by Folder

Create Parameter ✕

Name:

Properties

Data type: ▼

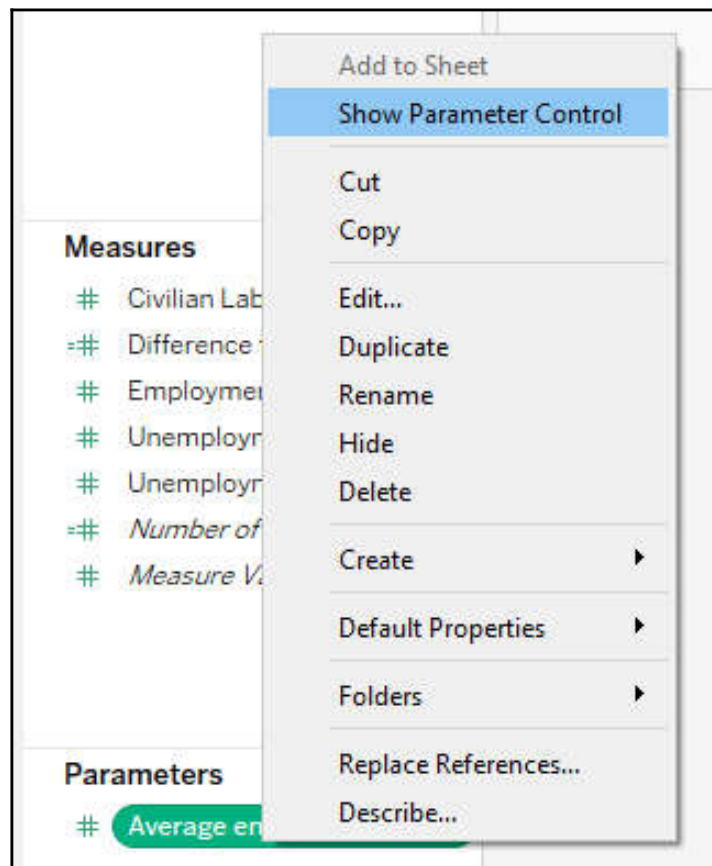
Current value:

Display format: ▼

Allowable values: All List Range

Parameters

- # Average employment cut-...



Average employment c...

Create Set ✕

Name:

None

By field:

Area Count

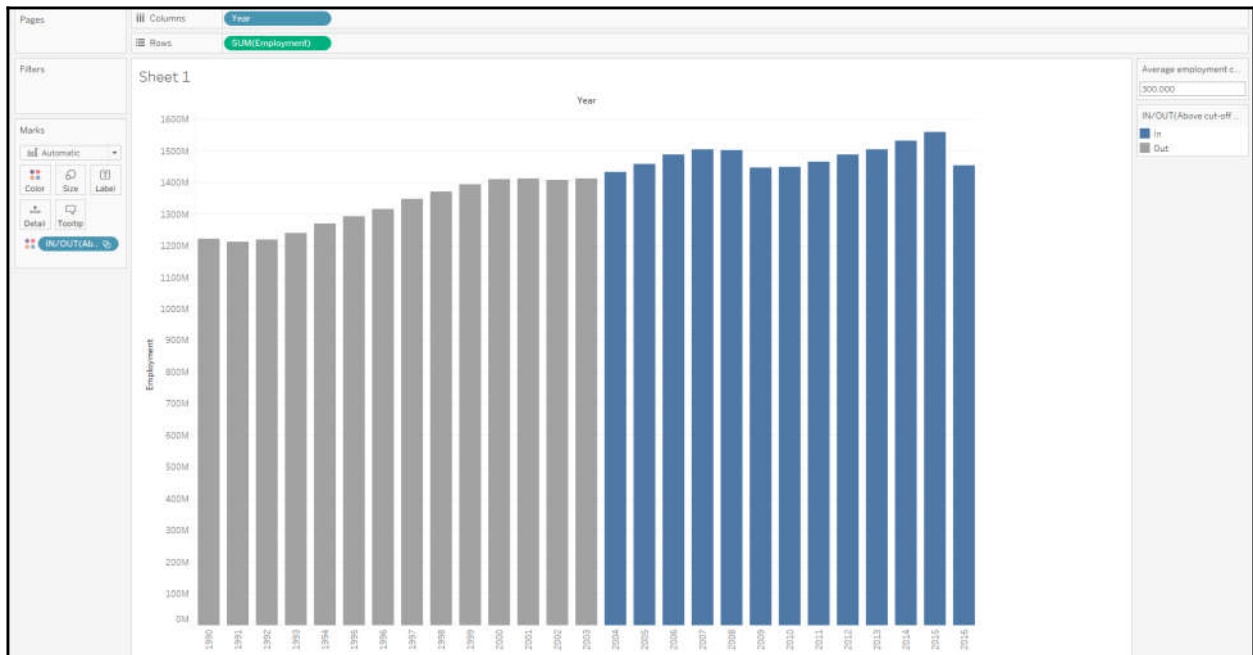
Range of Values

Min:

Max:

By formula:

```
AVG({Employment!})>[Average employment cut-off]
```

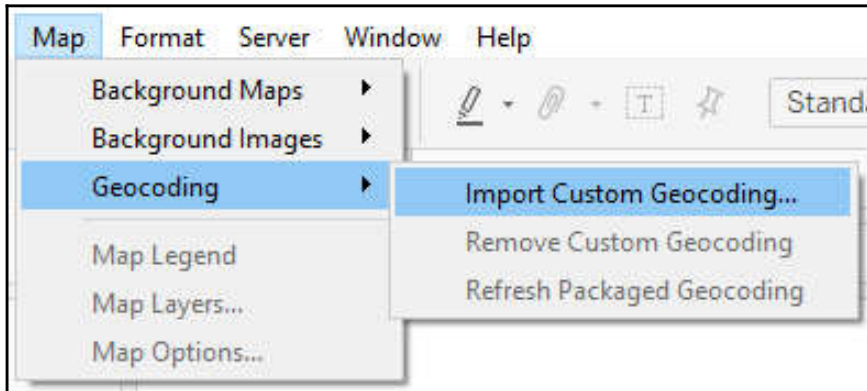
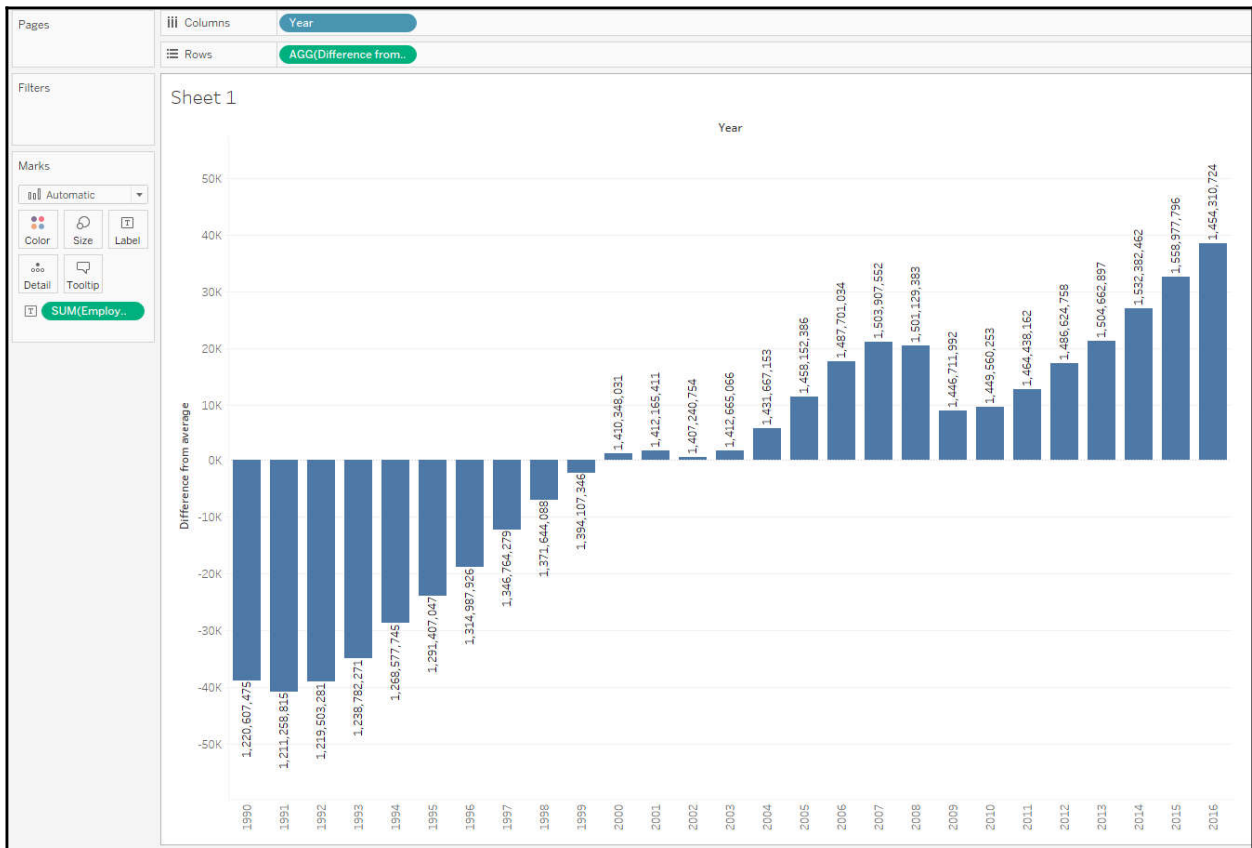



Difference from average

AVG([Employment]) - (FIXED: AVG([Employment]))

The calculation is valid.

Apply OK



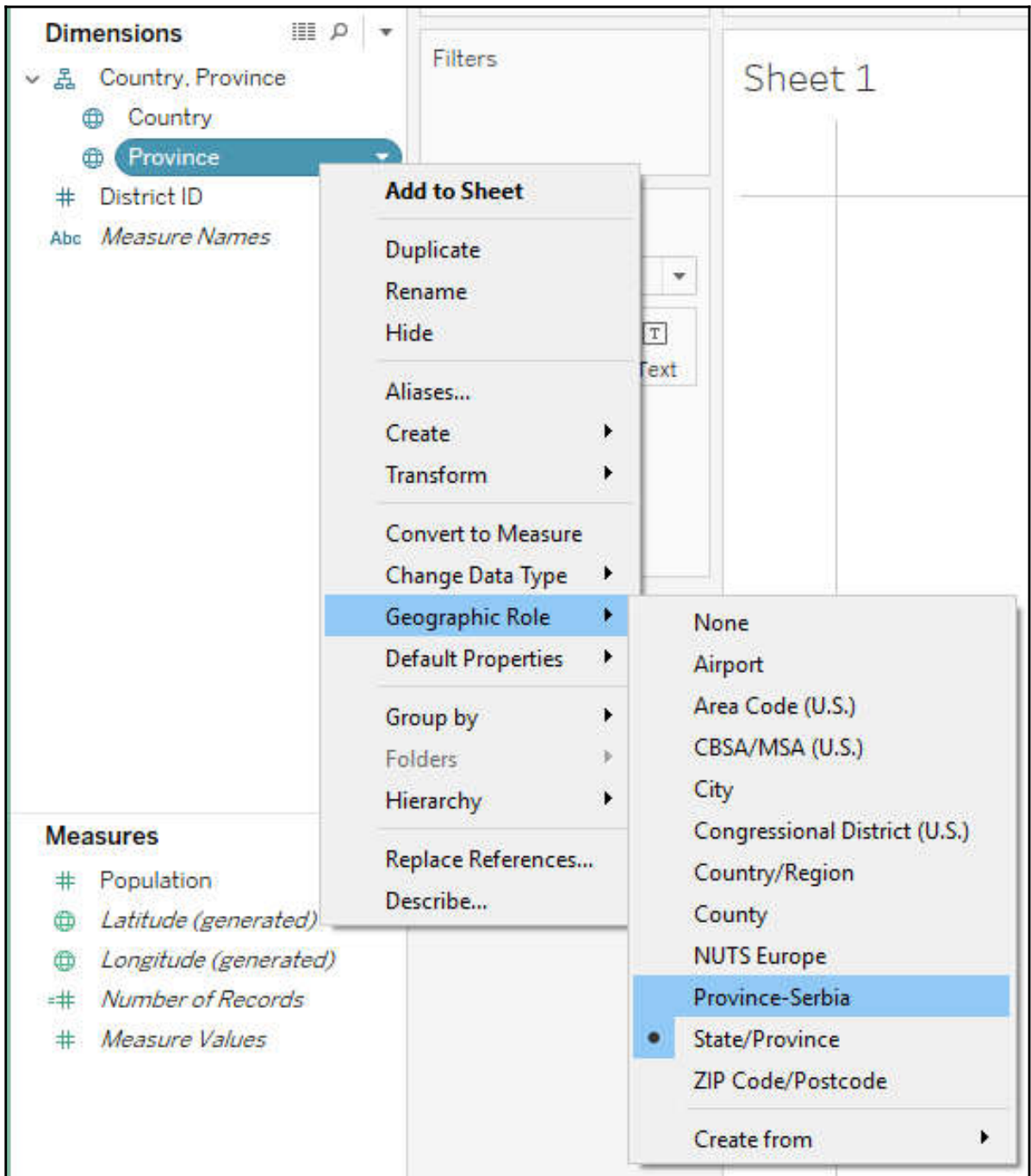
Import Custom Geocoding ✕

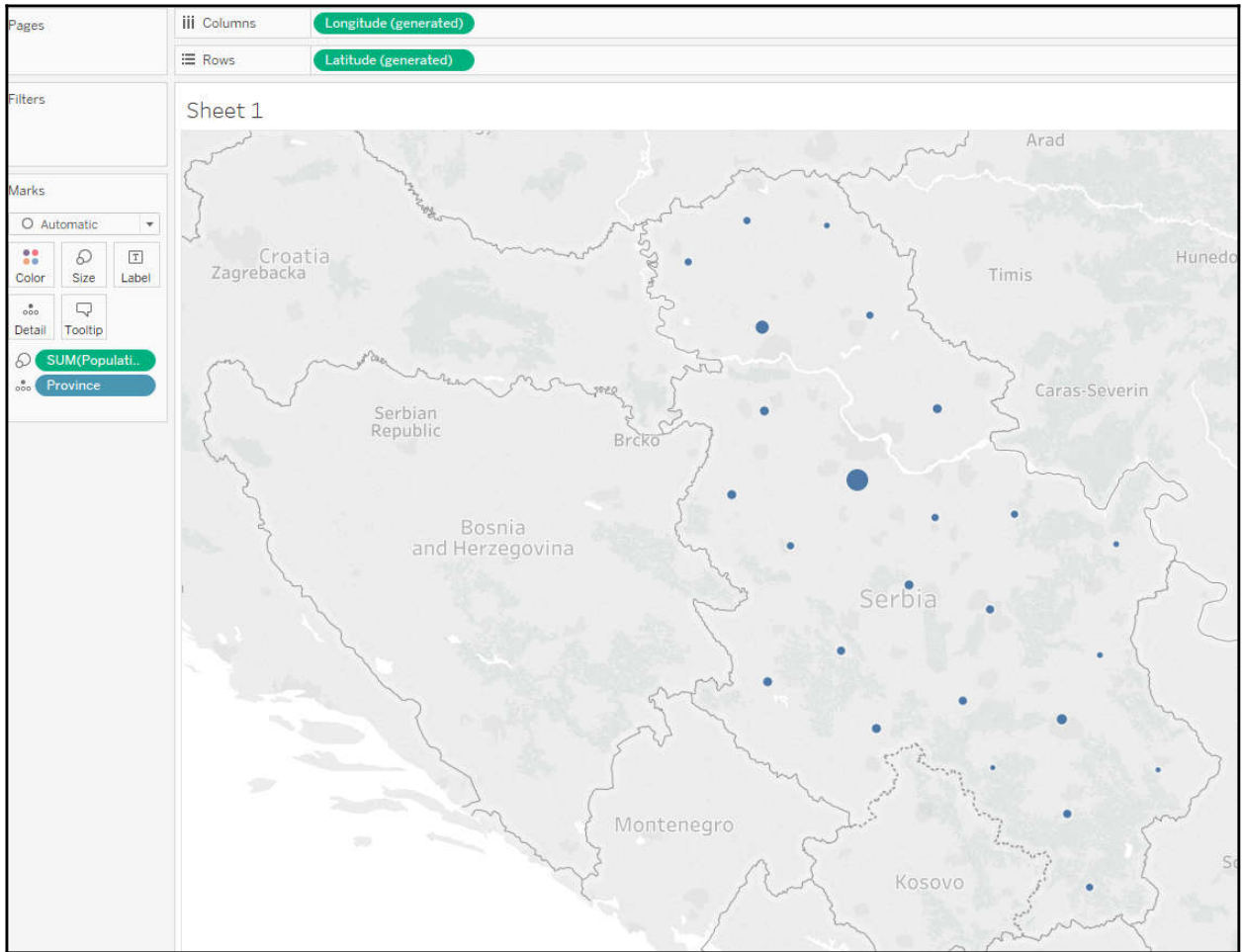
Import from all CSV files in directory:


...

Import from current workbook





[Learn about Custom Geocoding](#) Import Cancel












Serbia_Provinces_Points.csv —  — Serbia_Provinces_Features....

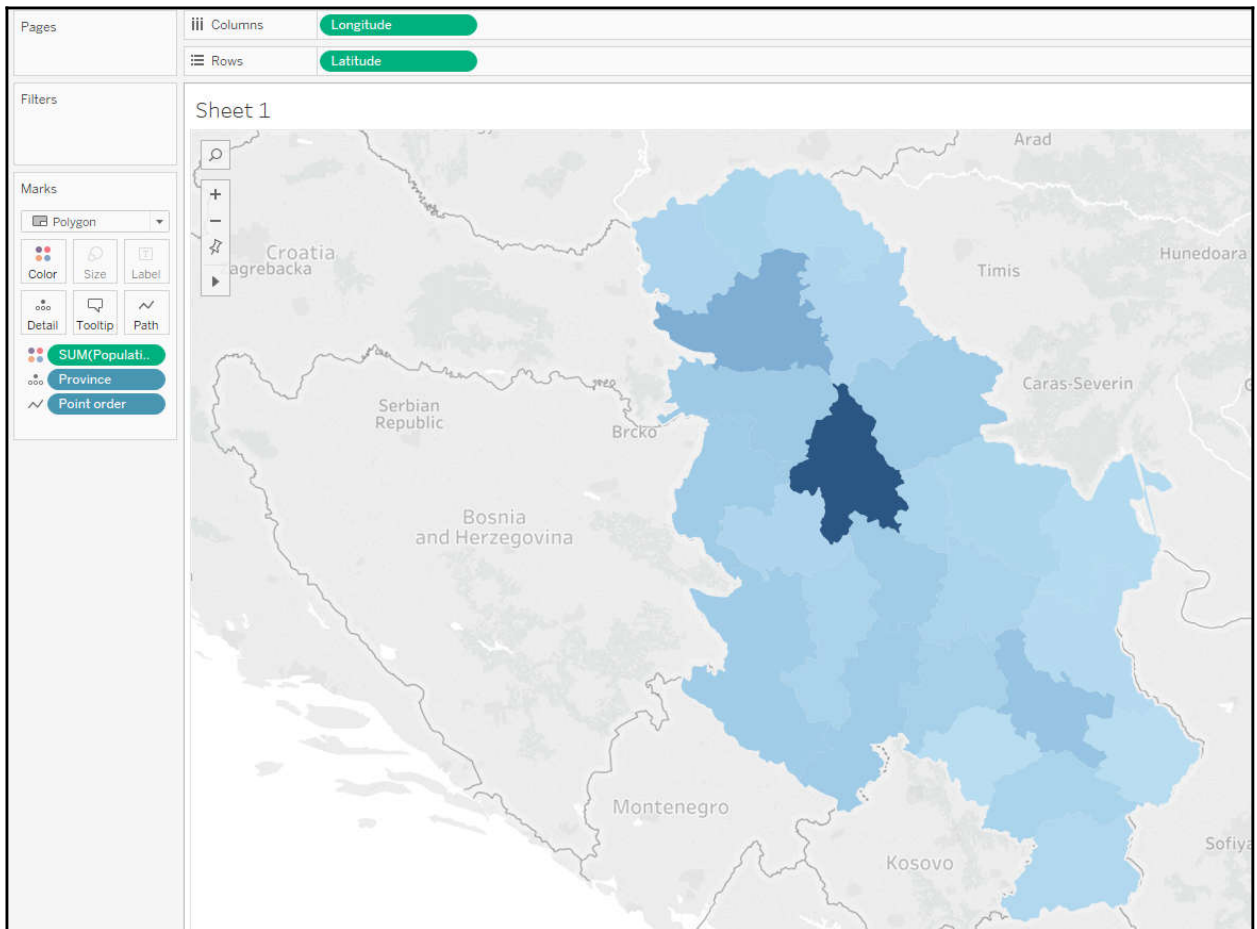
Join ✕

 Inner	 Left	 Right	 Full Outer
Data Source		Serbia_Provinces_Feature...	
ID	=	ID (Serbia Provinces Fea...	
<i>Add new join clause</i>			

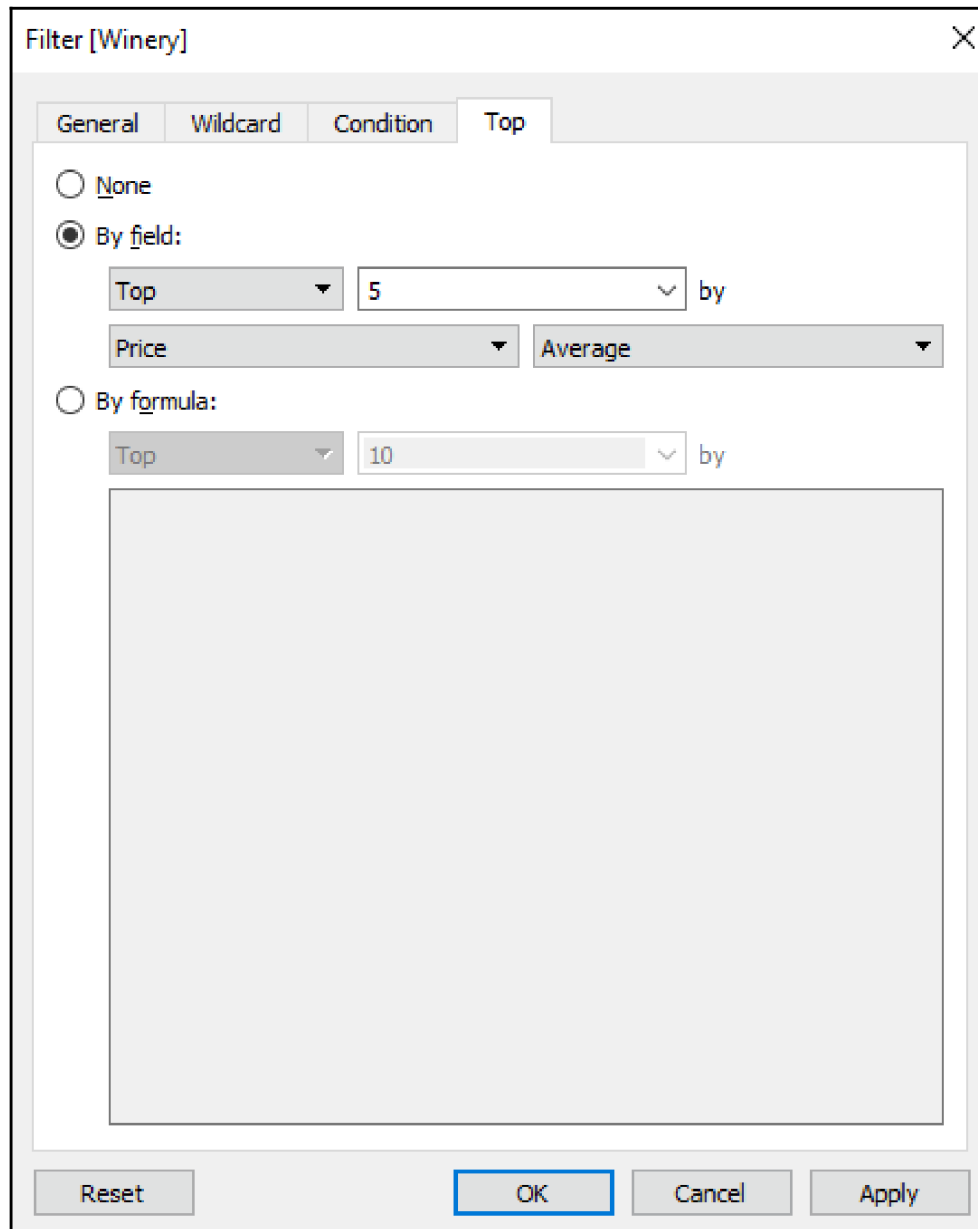
Marks

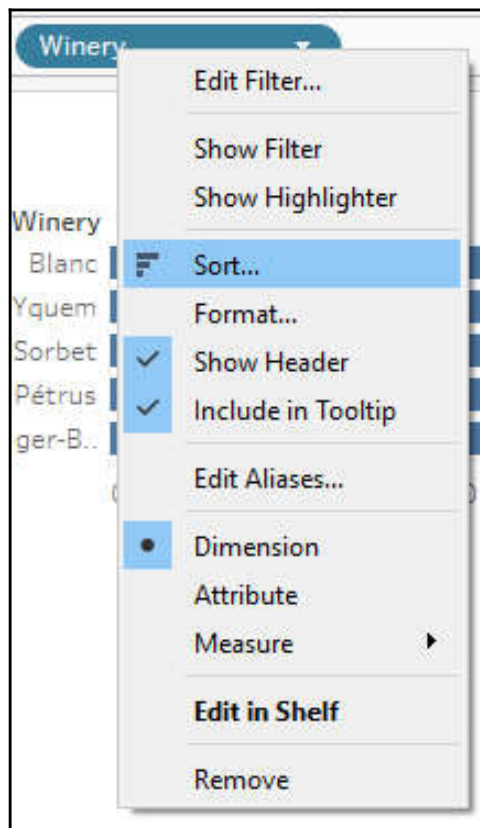
 Polygon ▾

 Color	 Size	 Label
 Detail	 Tooltip	 Path



Chapter 5: Tableau Desktop Advanced Filtering





Sort [Winery] ✕

Sort order

Ascending

Descending

Sort by

Data source order

Alphabetic

Field Aggregation:

Price Average

Manual

Château Cheval Blanc

Château d'Yquem

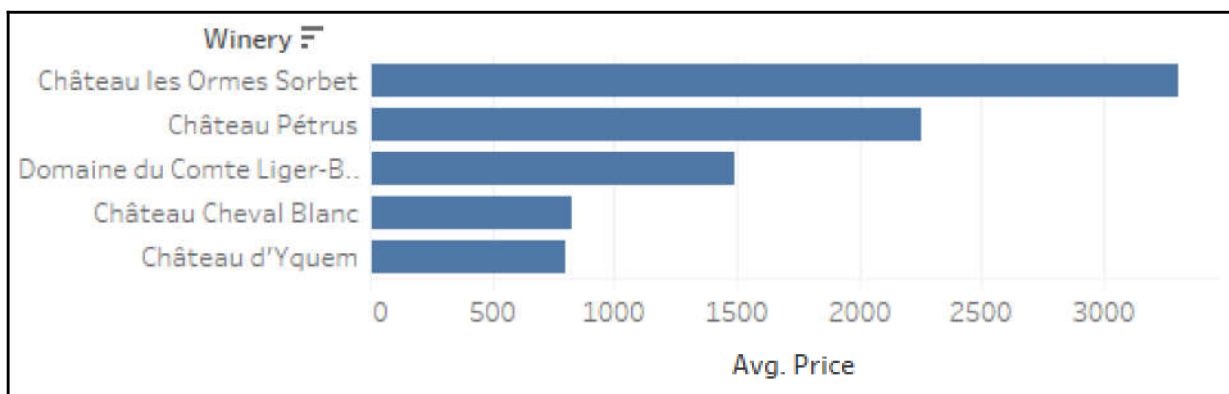
Château les Ormes Sorbet

Château Pétrus

Domaine du Comte Liger-Belair

Up

Down



Filter [Winery] ✕

General Wildcard Condition **Top**

None

By field:

Top 5 by

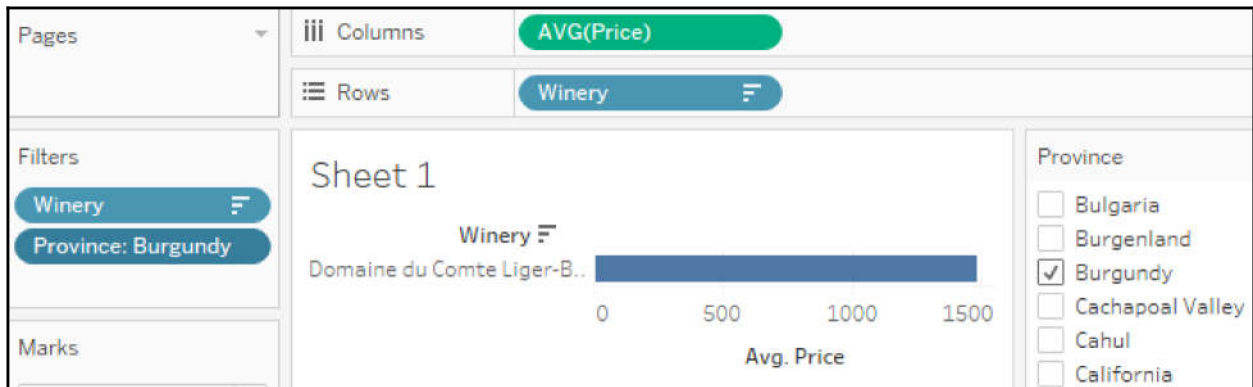
Top

Bottom Average

By formula:

Top 10 by

Reset OK Cancel Apply



The screenshot shows the "Edit Filter..." context menu open over the "Winery" filter in the "Filters" shelf. The menu options are:

- Show Filter
- Clear Filter
- Add to Context**
- Apply to Worksheets
- Create Set...
- Dimension
- Attribute
- Measure
- Remove

The "Add to Context" option is highlighted in blue. The background shows the same Tableau interface as the first screenshot, with the "Winery" filter selected in the "Filters" shelf and the "Province: Burgun..." filter partially visible.



Filter Field [Points] ✕

How do you want to filter on [Points]?





- # **All values**
- # Sum
- # Average
- # Median
- # Count
- # Count (Distinct)
- # Minimum
- # Maximum

- # Standard deviation
- # Standard deviation (Population)
- # Variance
- # Variance (Population)

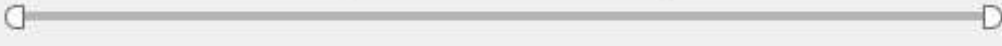
- # Attribute

Next > Cancel

Filter [Points] ✕

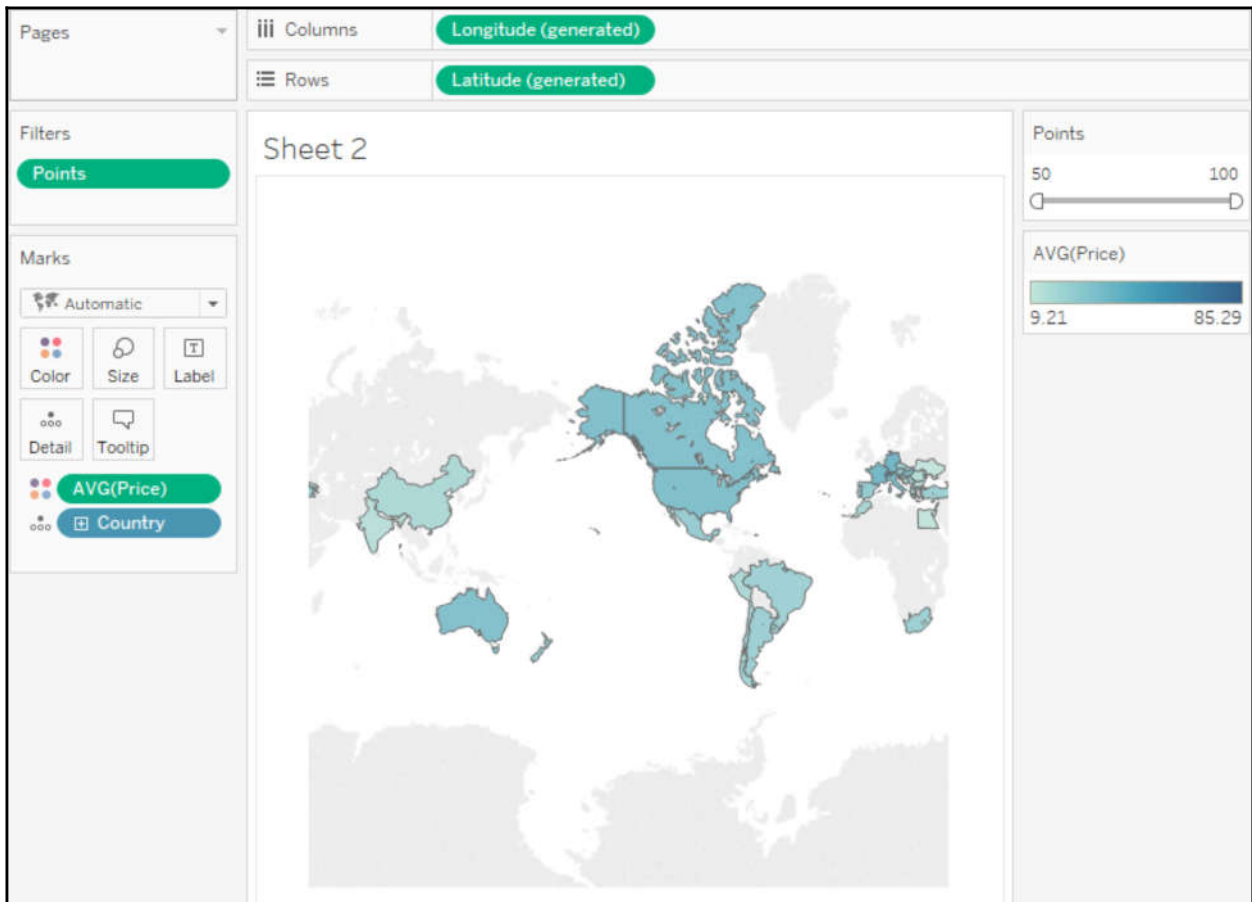

Range of values 
At least 
At most 
Special

Range of values


80 100

Show: Only Relevant Values Include Null Values

Reset OK Cancel Apply



Filter Field [Date] ✕

How do you want to filter on [Date]?

- Relative Date
- Range of Dates**

- Years
- Quarters
- Months
- Days
- Week numbers
- Weekdays
- Month / Year
- Month / Day / Year
- Individual Dates

- Count
- Count (Distinct)
- Minimum
- Maximum

- Attribute

Filter [Date]



Relative dates **Range of dates** Starting date Ending date Special

Range of dates

12/1/2017

2/1/2018

10/30/2017


Show: Only Relevant Values


Reset


February 2018						
S	M	T	W	T	F	S
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	1	2	3
4	5	6	7	8	9	10
Today: 10/28/2018						


Pages	Columns	Rows	Item
Filters			
Date			
Marks			
Automatic			
Color	Size	Text	
Detail	Tooltip		
SUM(Number ..			
Sheet 1			
Item			
Afternoon with the baker	15	^	
Alfajores	87		
Art Tray	11		
Baguette	23		
Bakewell	19		
Bare Popcorn	3		
Bread	1,210		
Brioche and salami	2		
Brownie	82		
Cake	344		
Chicken Stew	22		
Coffee	1,857		
Coke	61		
Cookies	173		
Crepes	6		
Crisps	9		
Duck egg	2		
Dulce de Leche	6		
Eggs	4		
Ella's Kitchen Pouches	6		
Extra Salami or Feta	9		
Farm House	137		
Focaccia	24		


Filter [Date] ✕


Relative dates


Range of dates


Starting date


Ending date


Special

Starting date

10/30/20174/9/2018

Show: Only Relevant Values Include Null Values

ResetOKCancelApply

Filter [Date]



Relative dates Range of dates Starting date Ending date Special

Relative dates

1/28/2018 to 2/1/2018

Years Quarters Months Weeks Days

- Previous day Last 5 days
- Anchor day Next 3 days
- Next day

Anchor relative to 2/1/2018

Include null values

Reset OK Cancel Apply

< February 2018 >

S	M	T	W	T	F	S
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	1	2	3
4	5	6	7	8	9	10

Today: 10/28/2018

Pages ▼

Columns

Rows Item

Filters

Date

Marks

Automatic ▼

Color Size Text

Detail Tooltip

SUM(Number ..

Sheet 3

Item	
Alfajores	3
Baguette	3
Bakewell	1
Bread	33
Brownie	1
Cake	9
Chicken Stew	1
Coffee	33
Coke	3
Cookies	5
Extra Salami or Feta	1
Farm House	1
Granola	1
Hot chocolate	4
Juice	2
Medialuna	1
NONE	2
Pastry	5
Sandwich	5
Soup	1
Spanish Brunch	1
Tea	6
Toast	2
Truffles	1
Vegan mincepie	1

The image shows a Tableau interface with a context menu open over a measure field. The menu options are:

- Filter...
- Show Filter
- Format...
- Show Header
- Include in Tooltip
- Dimension
- Attribute
- Measure (Sum) ▶
- Discrete
- Continuous
- Edit in Shelf**
- △ Add Table Calculation...
- Quick Table Calculation** ▶
- Remove

The Quick Table Calculation sub-menu is open, showing the following options:

- Running Total
- Difference
- Percent Difference
- Percent of Total**
- Rank
- Percentile

The background shows a Tableau worksheet with a column shelf containing 'SUM(Number of R...)' and a row shelf containing 'Country'. The view displays a horizontal bar chart for 'Sheet 1' with countries listed on the y-axis: Null, Argentina, Armenia, Australia, Austria, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, Chile, China, Croatia, Cyprus, Czech Republic, Egypt, England, and France. The bars are colored and represent the sum of a measure for each country.

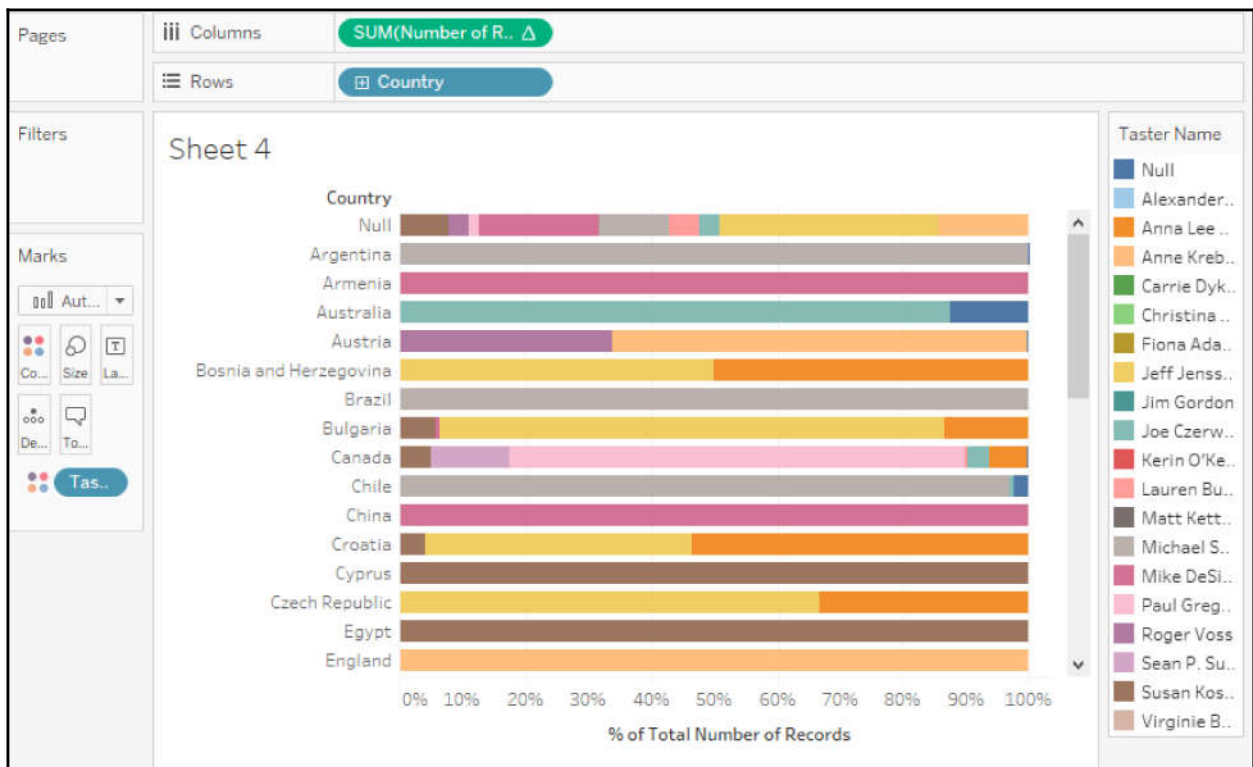
The image shows a Tableau interface with a context menu open over a measure field. The background shows a table with columns 'Country' and 'SUM(Number of R...)' and a list of countries including Argentina, Armenia, Australia, Austria, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, Chile, China, Croatia, Cyprus, Czech Republic, Egypt, and England.

The context menu is open over the 'SUM(Number of R...)' field. The menu items are:

- Filter...
- Show Filter
- Format...
- Show Header
- Include in Tooltip
- Dimension
- Attribute
- Measure (Sum) ▶
- Discrete
- Continuous
- Edit in Shelf**
- Compute Using ▶
- △ Edit Table Calculation...
- Clear Table Calculation
- Quick Table Calculation ▶
- Remove

The 'Compute Using' submenu is open, showing the following options:

- Table (across)
- Table (down)
- Table
- Cell
- Country
- Taster Name



Filter [Taster Name] ✕

General Wildcard Condition Top

Select from list Custom value list Use all ☰

Enter search text

- Null
- Alexander Peartree
- Anna Lee C. Iijima
- Anne Kriebiehl MW
- Carrie Dykes
- Christina Pickard
- Fiona Adams
- Jeff Jenssen
- Jim Gordon
- Joe Czerwinski
- Kerin O'Keefe

All None Exclude

Summary

Field: [Taster Name]
Selection: Selected 1 of 20 values
Wildcard: All
Condition: None
Limit: None

Reset OK Cancel Apply



Filter by Wine Taster



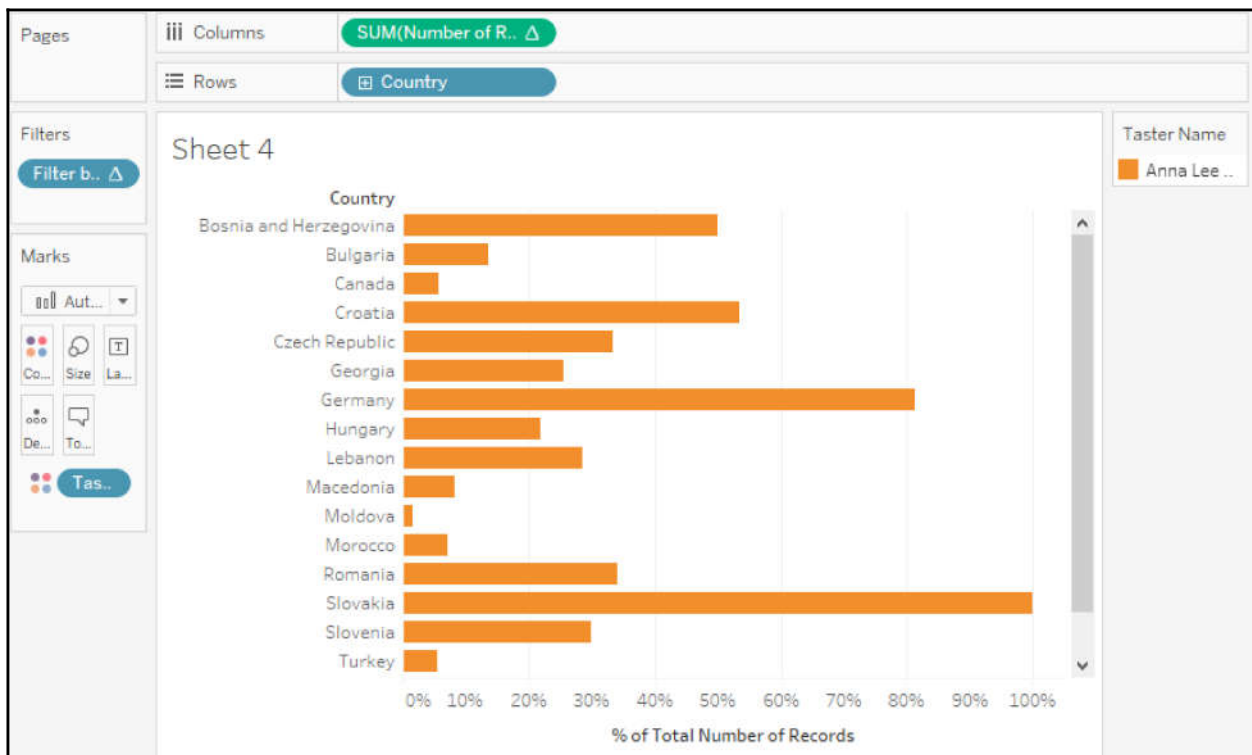
```
LOOKUP (ATTR ([Taster Name]), 0)
```

The calculation is valid.

Default Table Calculation

Apply

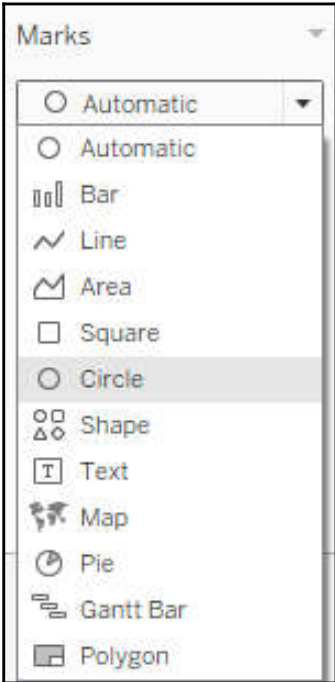
OK

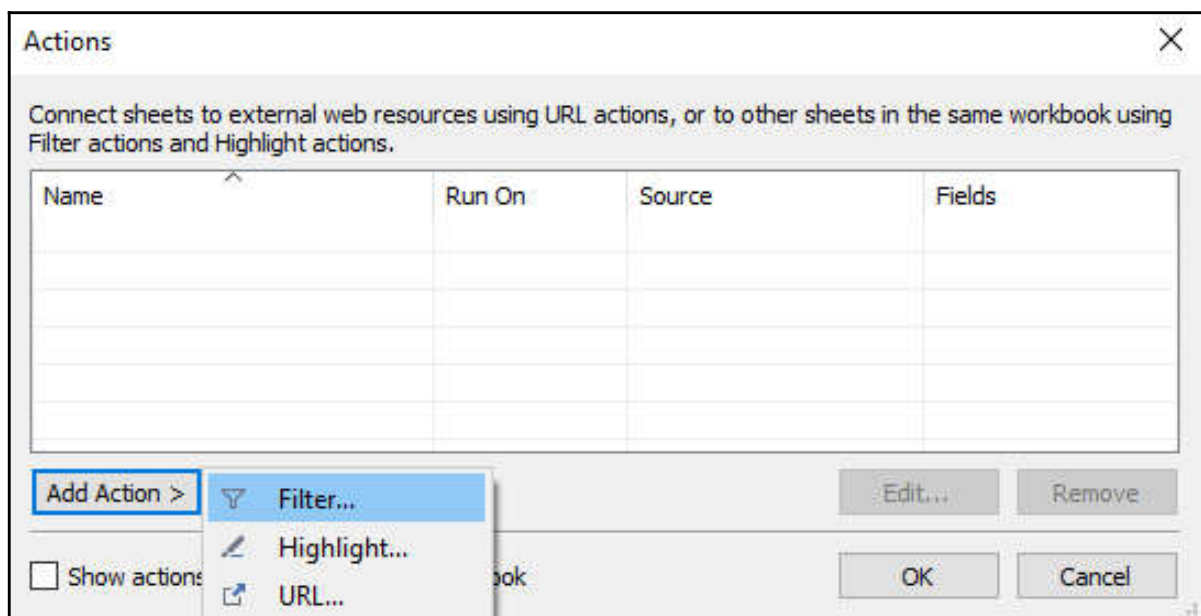
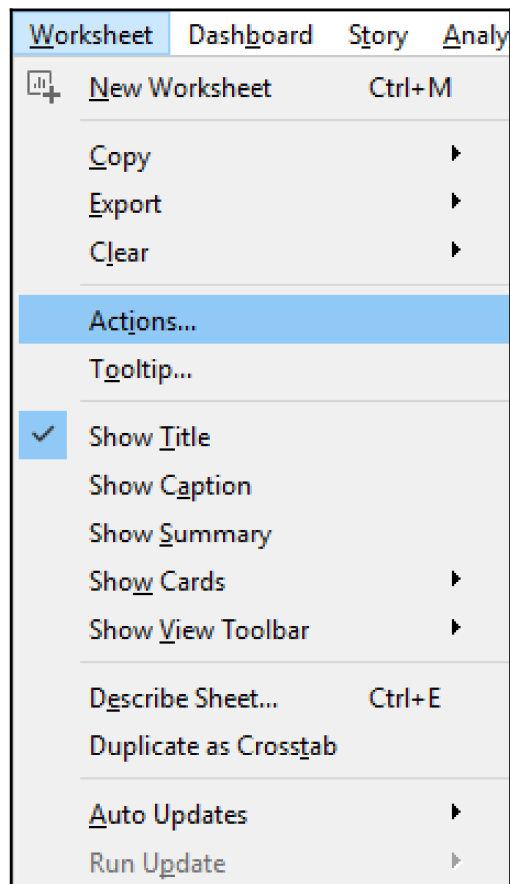


Warning [X]

? The field being added may contain as many as 44 members and the recommended maximum for this shelf is 20.

What do you want to do?





Add Filter Action ✕

Name: ▶

Source Sheets:

▼

Run action on:

Run on single select only

Target Sheets

▼

Clearing the selection will:

Leave the filter

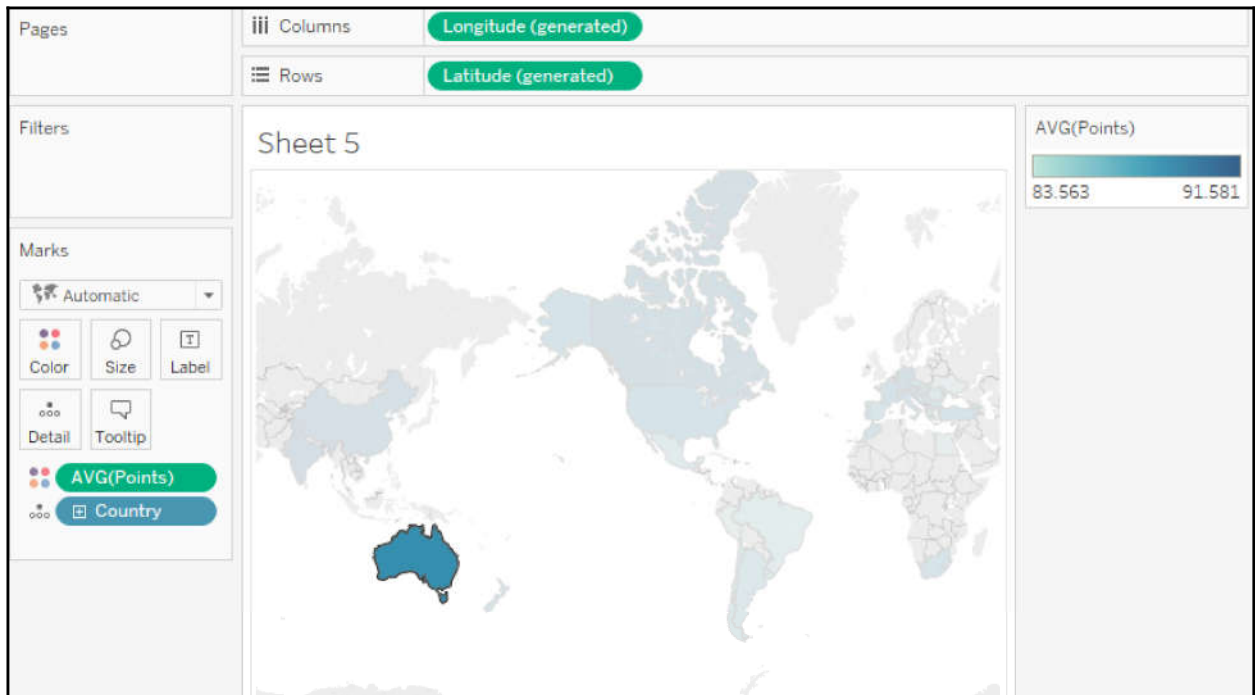
Show all values

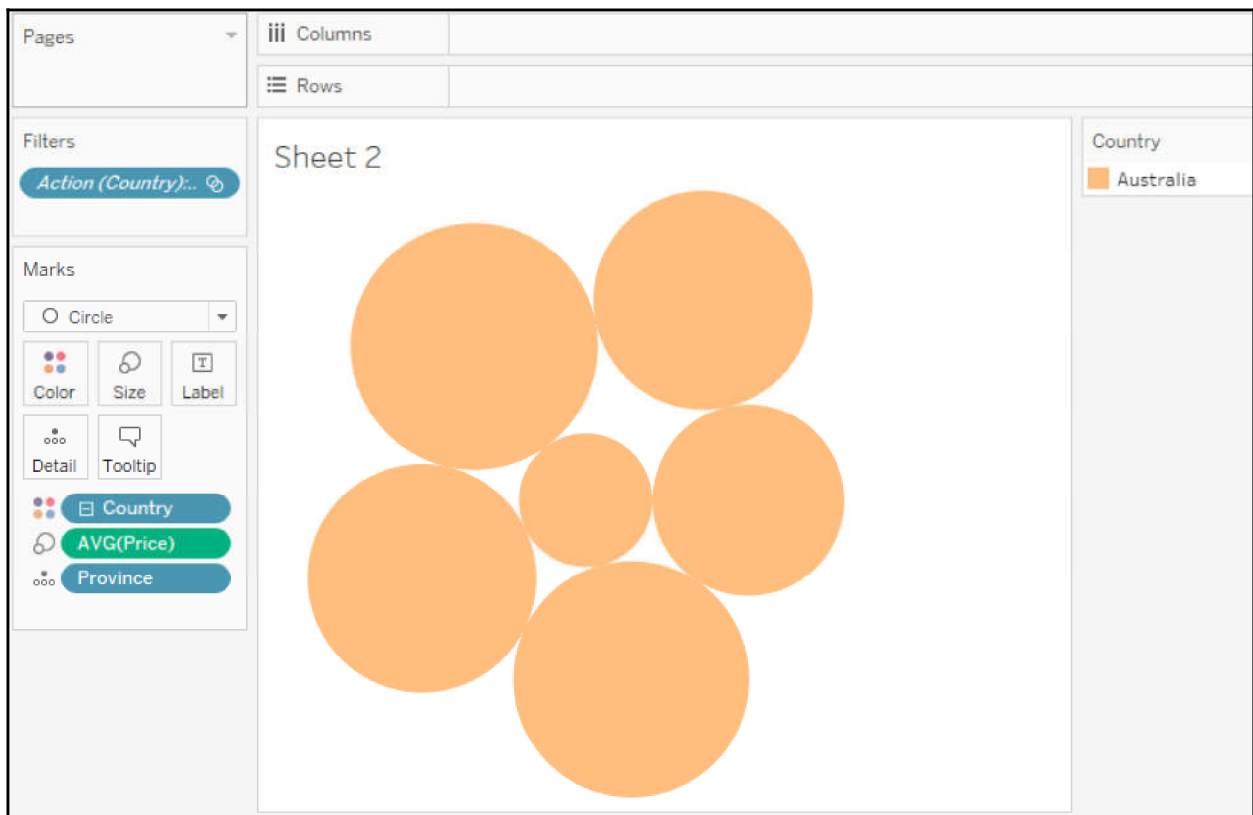
Exclude all values

Target Filters

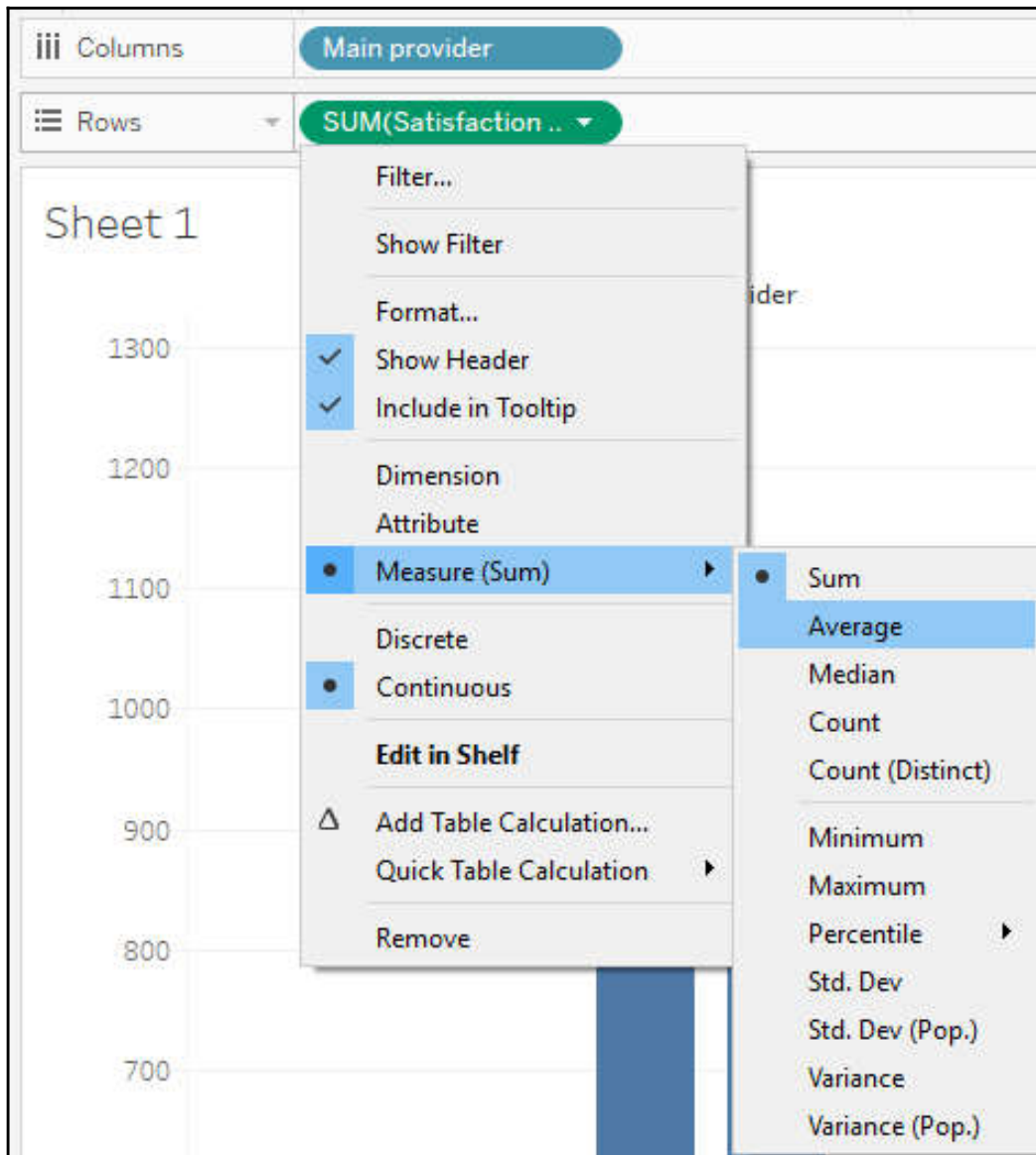
Selected Fields All Fields

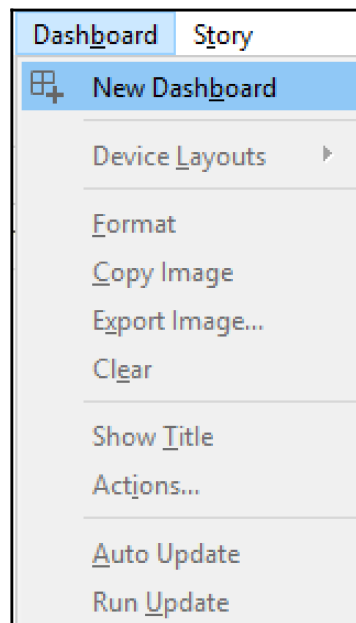
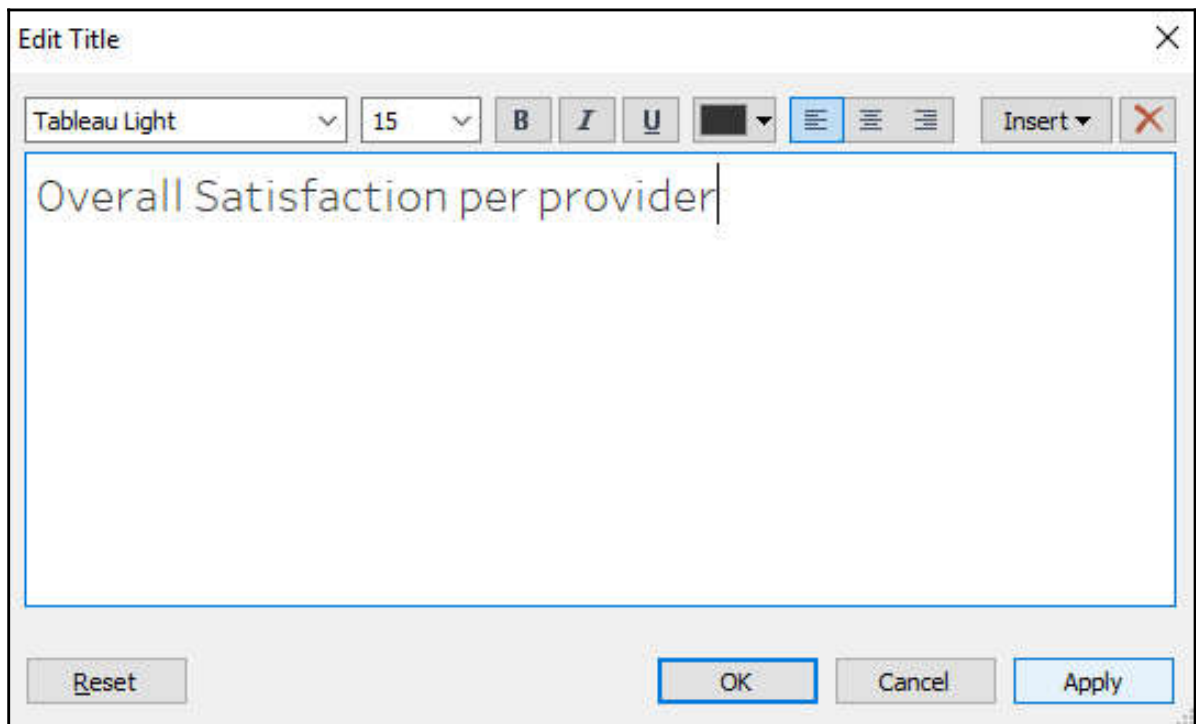
Source Field	Target Field	Target Data Source





Chapter 6: Building Dashboards





Dashboard Layout ▾

Device Preview

Size
Desktop Browser (1000 x 8... ▾

Sheets

- Sheet 1
- Sheet 2
- Sheet 3

Objects

- Horizontal Image
- Vertical Web Page
- A Text Blank

Tiled Floating

Show dashboard title

Drop sheets here

Dashboard

Layout

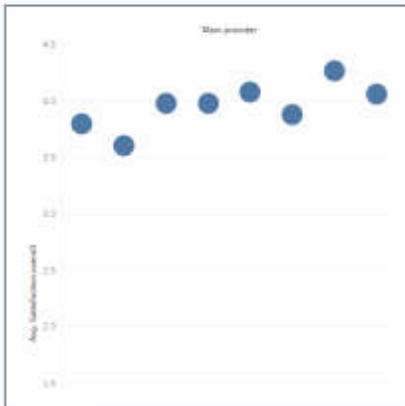
Device Preview

Size

Desktop Browser (1000 x 8... ▼

Sheets

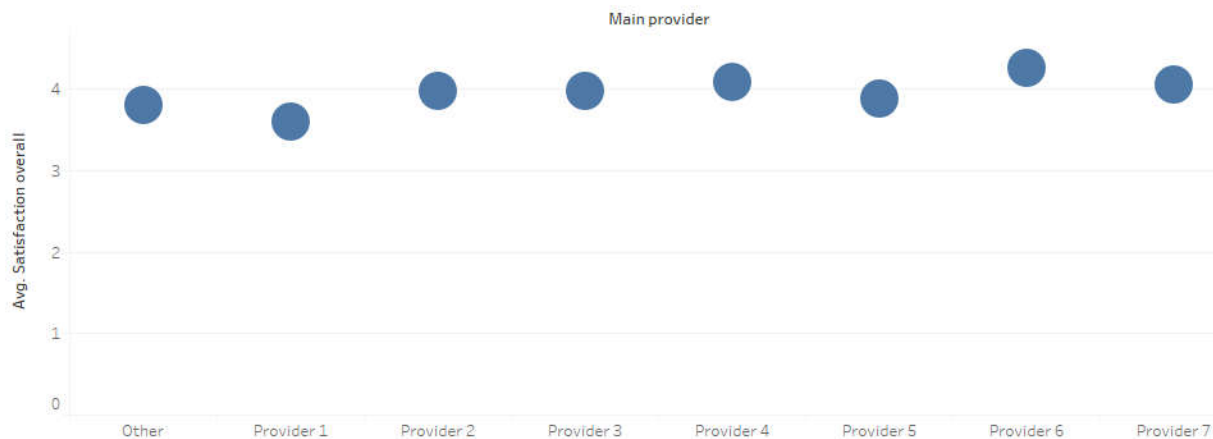
- Sheet 1
- Sheet 2
- Sheet 3



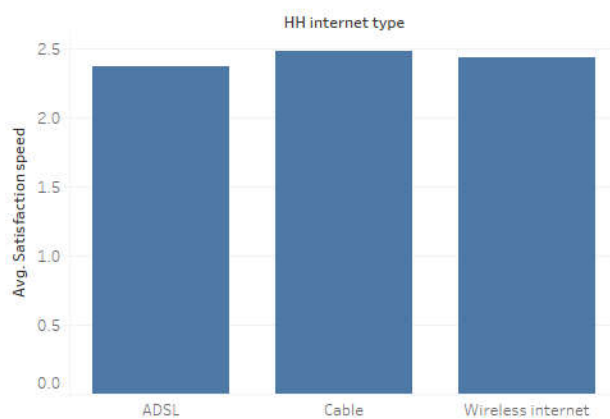
Sheet 1

Drop sheets here

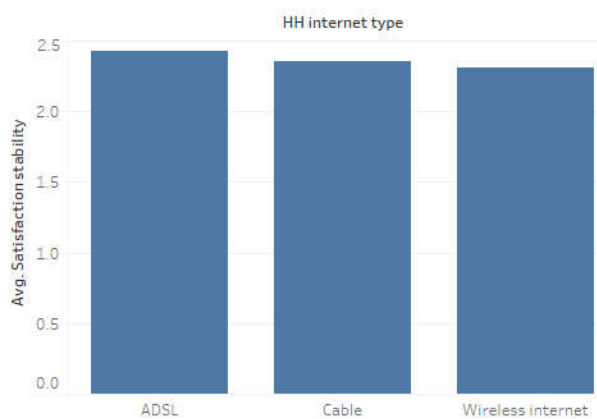
Overall Satisfaction per Provider



Satisfaction with speed



Satisfaction with stability



Objects

- Horizontal
- Vertical
- Text
- Image
- Web Page
- Blank

Tiled Floating

Show dashboard title

The image shows a Tableau dashboard titled "Dashboard 1" with a chart labeled "Overall Satisfaction". The chart's y-axis is "Avg. Satisfaction overall" with values 2, 3, and 4. A blue dot is plotted at the value 4. An "Edit Title" dialog box is open over the chart, showing the word "Satisfaction" in a blue font. The dialog includes a font dropdown set to "Tableau Book", a size dropdown set to "24", and buttons for Bold (B), Italic (I), and Underline (U). A color palette is visible on the right, and buttons for "Reset", "OK", "Cancel", and "Apply" are at the bottom.

The image shows the "Format Dashboard" dialog box. It has two main sections: "Dashboard Shading" and "Dashboard Title".

- Dashboard Shading:** A dropdown menu labeled "Default:" is currently empty.
- Dashboard Title:**
 - Font: "Tableau Boo..." (dropdown)
 - Alignment: "Left" (dropdown)
 - Shading: "None" (dropdown)
 - Border: "None" (dropdown)

Worksheet Titles

Font: **Tableau Boo..** ▾ 2

Shading: 26% ▾

Text Objects

Font:

Alignment:

None

More colors...

26%

Objects

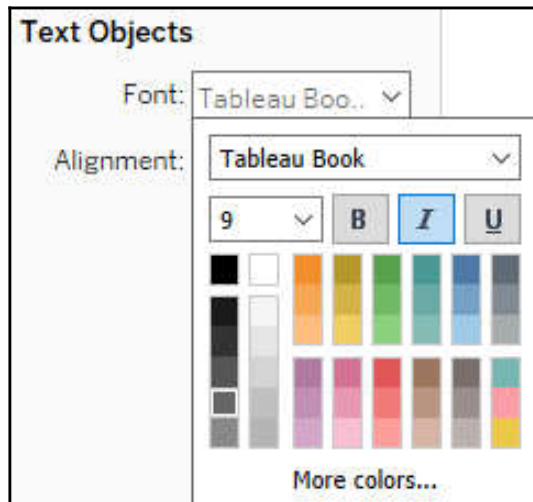
Horizontal Image

Vertical Web Page

A Text Blank

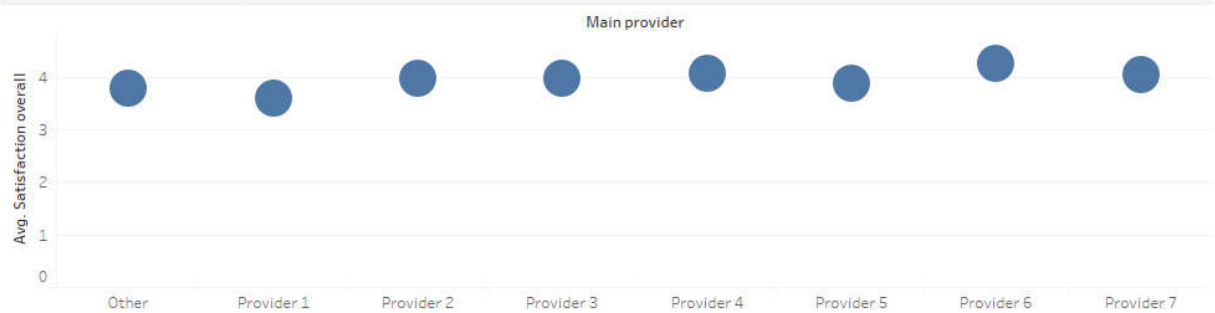
Tiled Floating

Show dashboard title



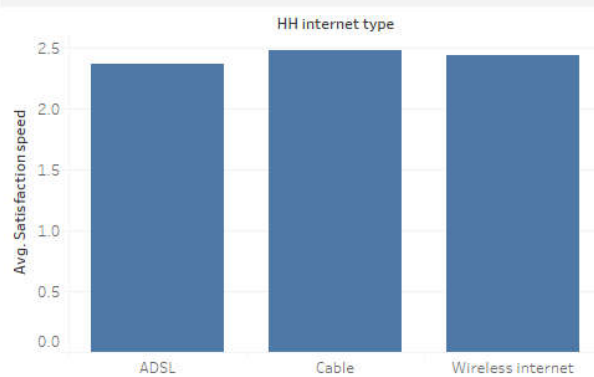
Satisfaction

Overall Satisfaction per Provider

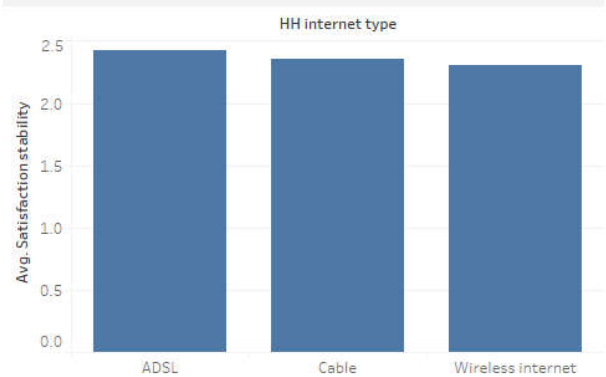


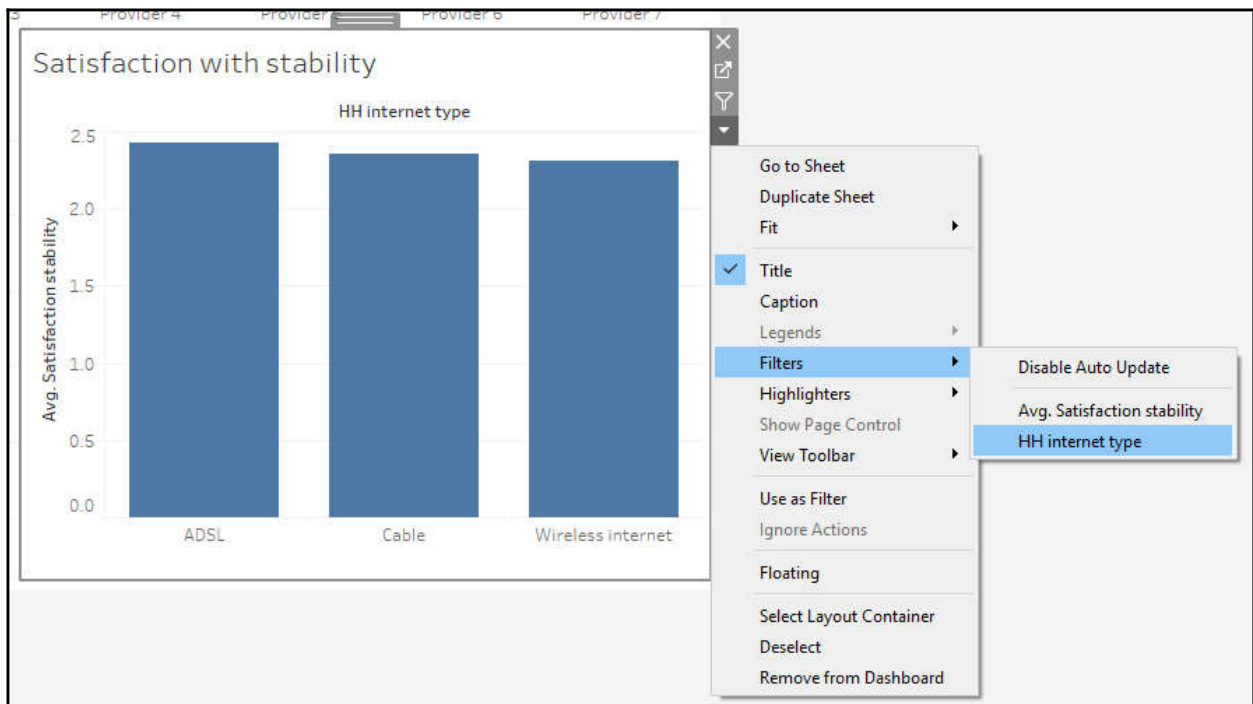
*Brand names have been removed

Satisfaction with speed

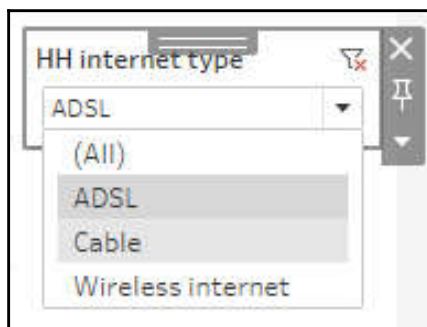
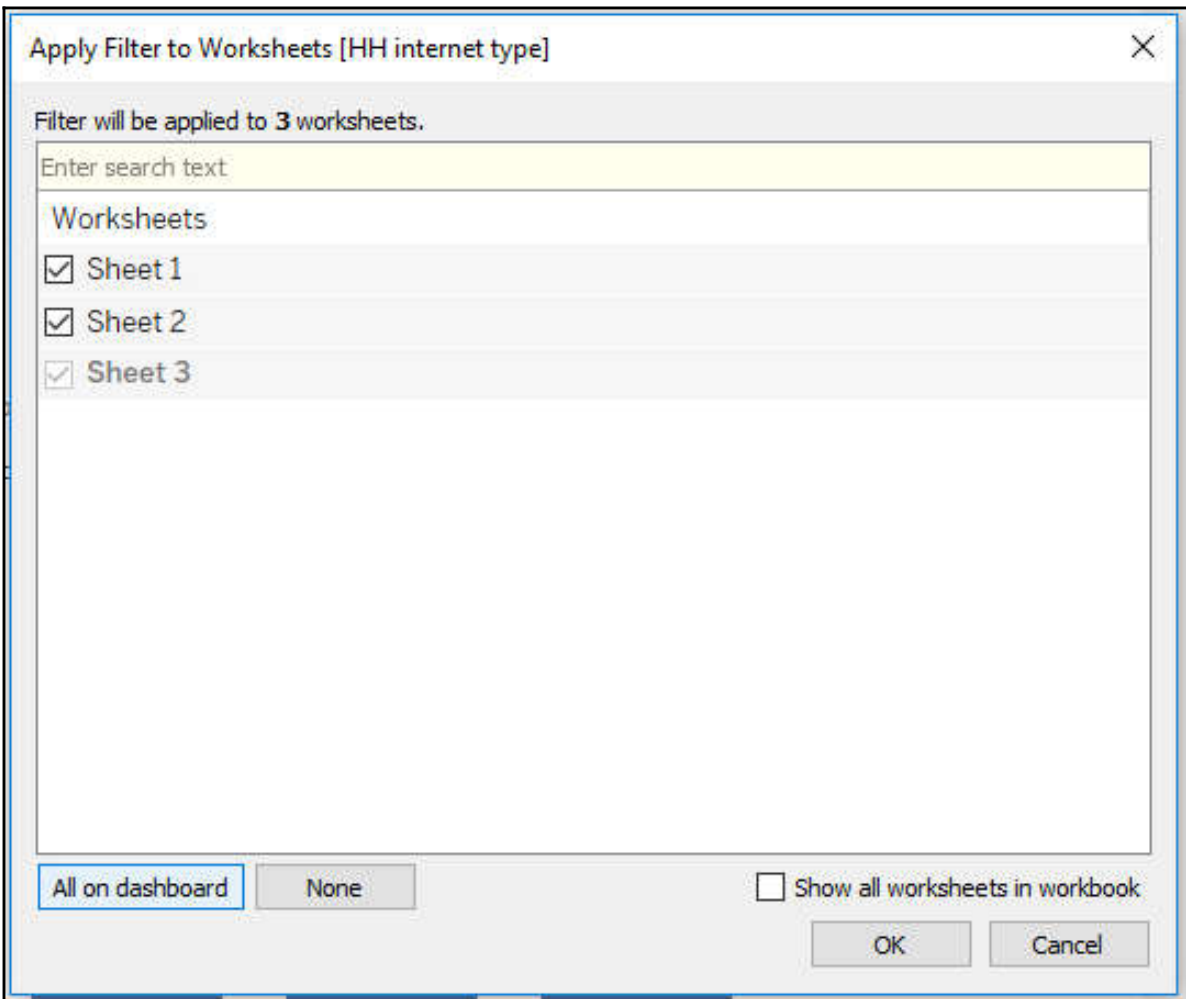


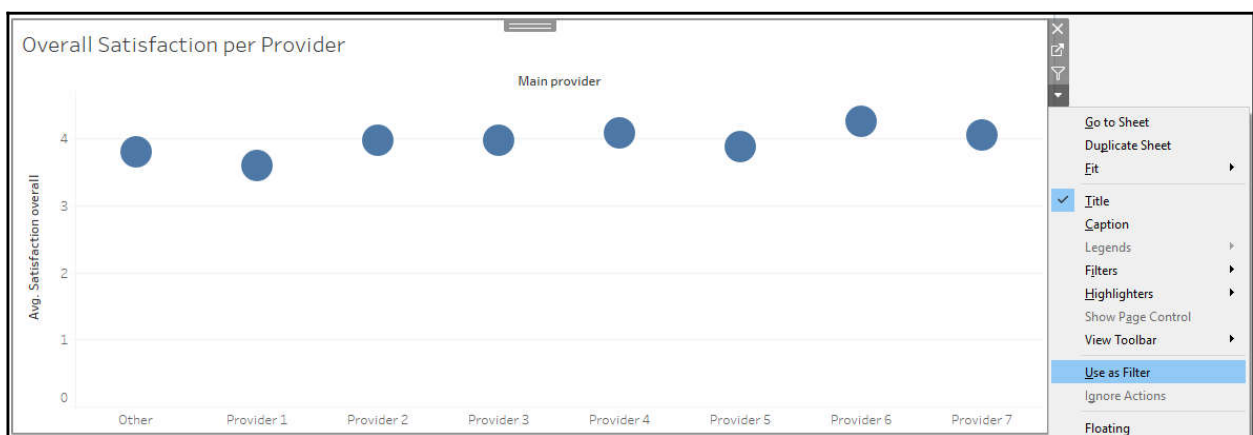
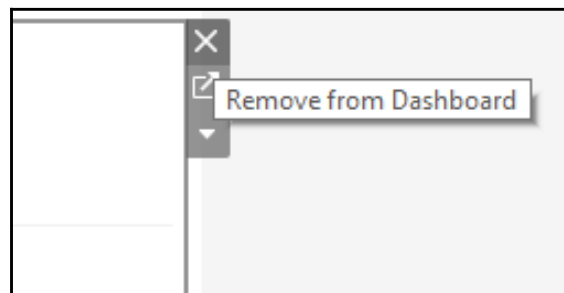
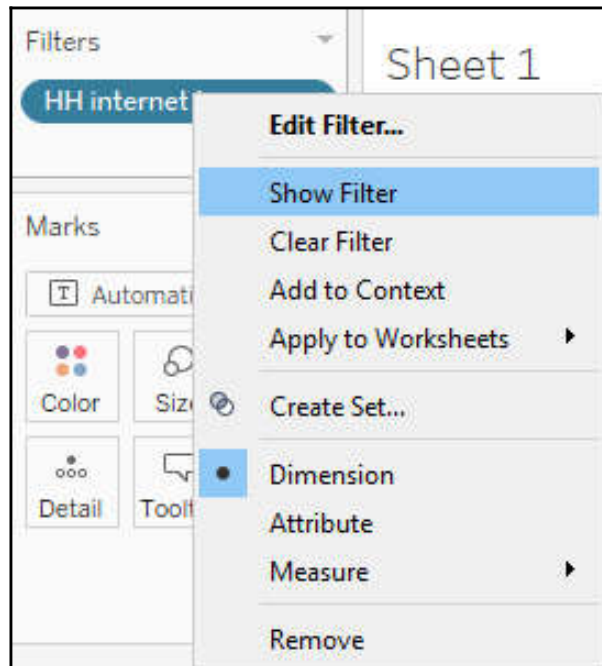
Satisfaction with stability





The screenshot shows a filter panel for "HH internet type" with a context menu open. The filter panel lists four options: "(All)", "ADSL", "Cable", and "Wireless internet", all of which are checked. The context menu includes options: "Edit Filter...", "Apply to Worksheets", "Format Filters...", "Customize", "Show Title", and "Edit Title...". The "Apply to Worksheets" option is selected, and a sub-menu is open showing "All Using Related Data Sources", "All Using This Data Source", "Selected Worksheets...", and "Only This Worksheet".





Actions ✕

Connect sheets to external web resources using URL actions, or to other sheets in the same workbook using Filter actions and Highlight actions.

Name	Run On	Source	Fields
Filter 1 (generated)	Select	Dashboard 1 (Sheet 1)	All

Show actions for all sheets in this workbook

Actions ✕

Connect sheets to external web resources using URL actions, or to other sheets in the same workbook using Filter actions and Highlight actions.

Name	Run On	Source	Fields

Show actions for all sheets in this workbook

- Filter...
- Highlight...
- URL...

Add Filter Action



Name:

Source Sheets:

Dashboard 1

- Sheet 1
- Sheet 2
- Sheet 3

Run action on:

Hover

Select

Menu

Run on single select only

Target Sheets

Dashboard 1

- Sheet 1
- Sheet 2
- Sheet 3

Clearing the selection will:

Leave the filter

Show all values

Exclude all values

Target Filters

Selected Fields

All Fields

Source Field	Target Field	Target Data Source

Add Filter...

Edit...

Remove

OK

Cancel

☰ Rows ▾ SUM(Number of R.. ▾

Table Calculation ✕
% of Total Number of Records

Calculation Type

Percent of Total ▾

Compute total across all pages

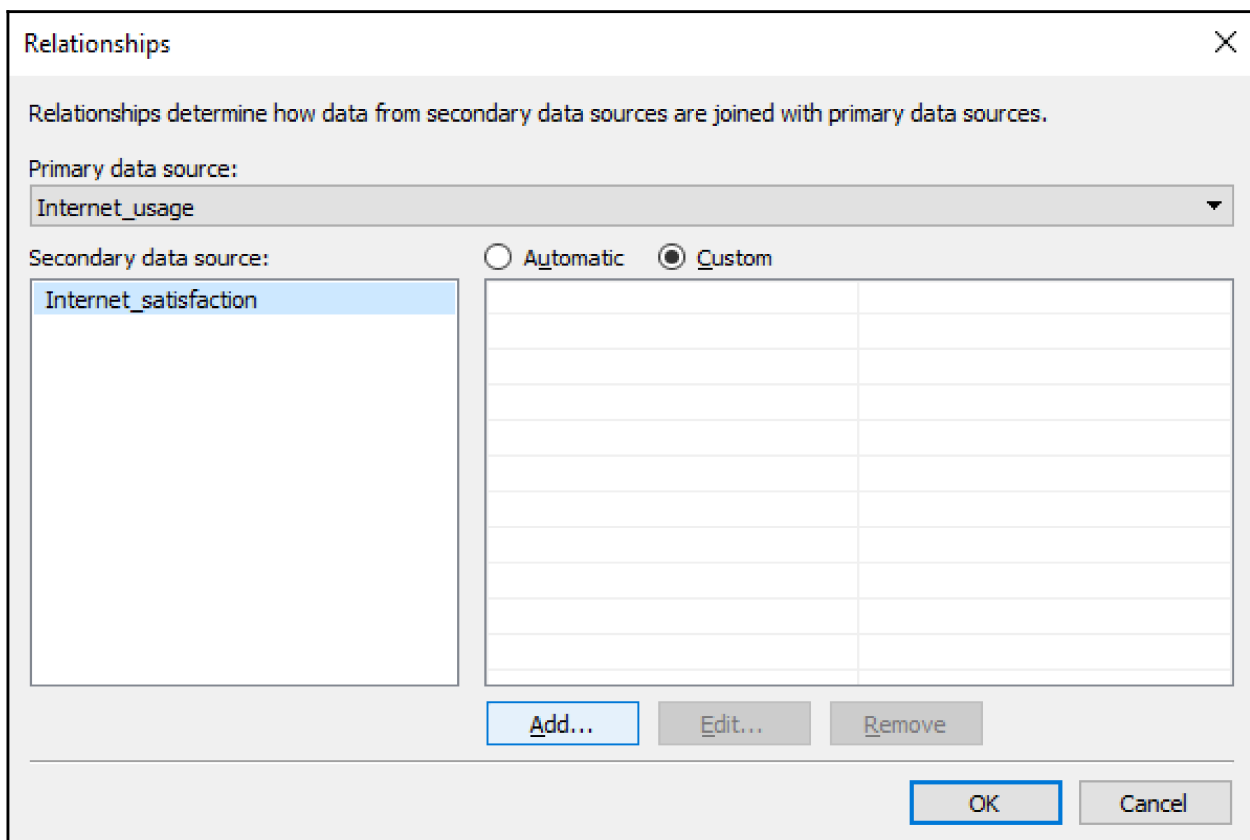
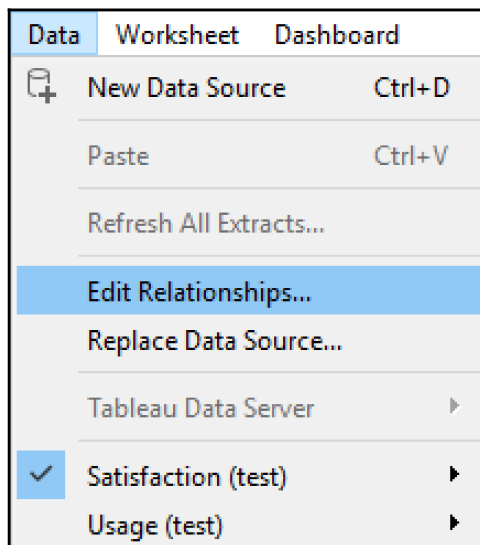
Compute Using

Table (across)
Table (down)
Table
Cell
Specific Dimensions

Region

At the level _____ ▾

Show calculation assistance



Add/Edit Field Mapping ✕

Primary data source field: Secondary data source field:

Enter search text Enter search text

<ul style="list-style-type: none">AreaSettlement type	<ul style="list-style-type: none">HH internet typeIdMain providerRegion
--	--

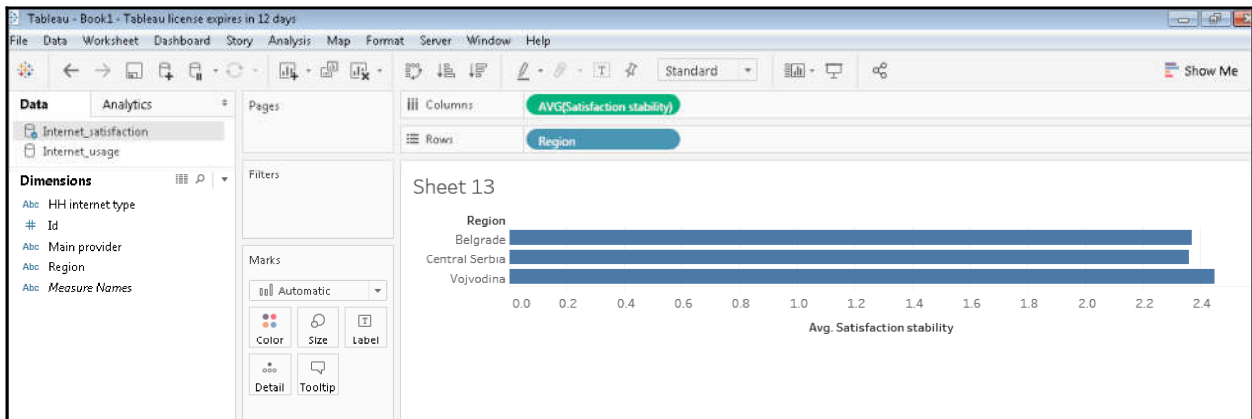
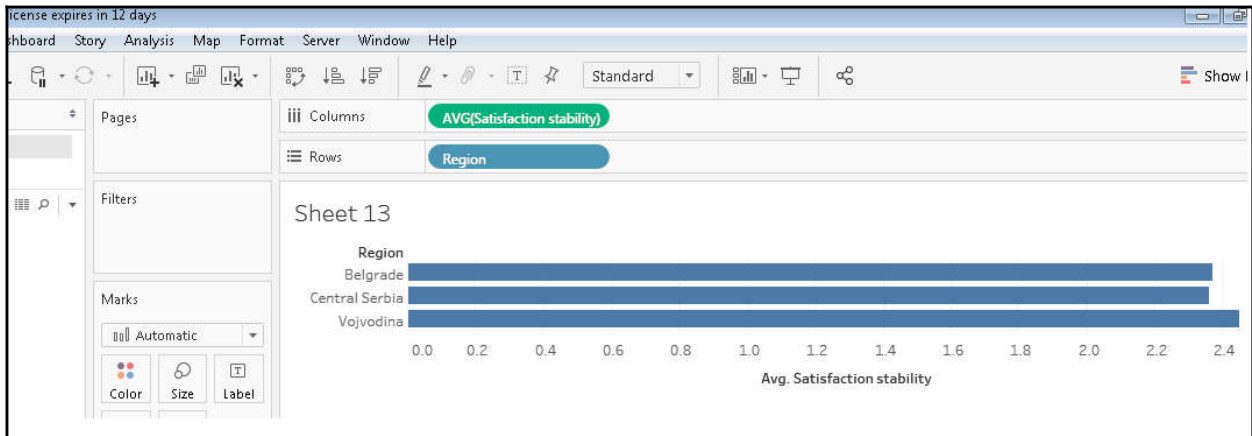
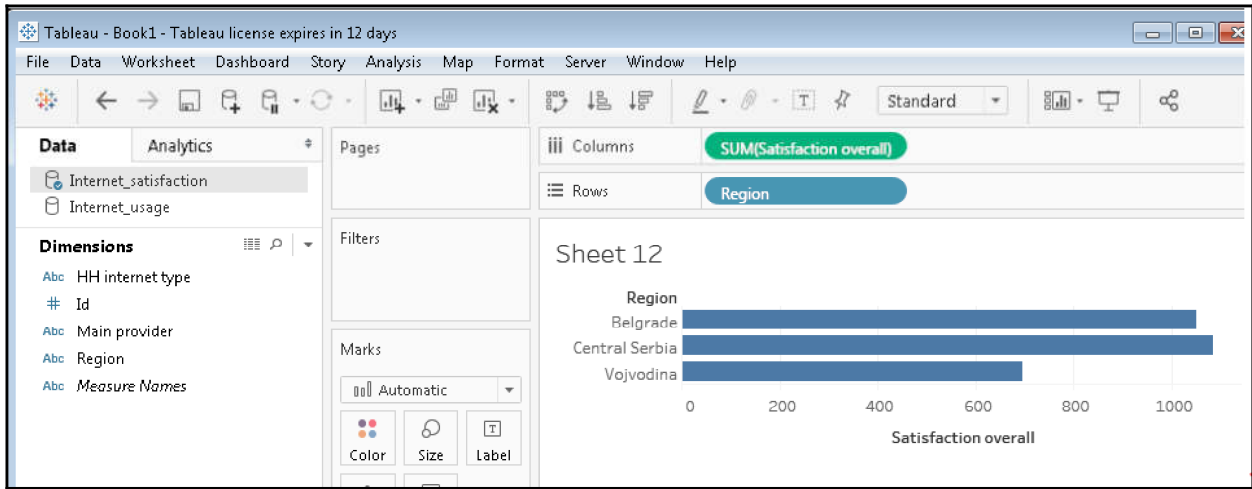
Apply Filter to Worksheets [Area] ✕

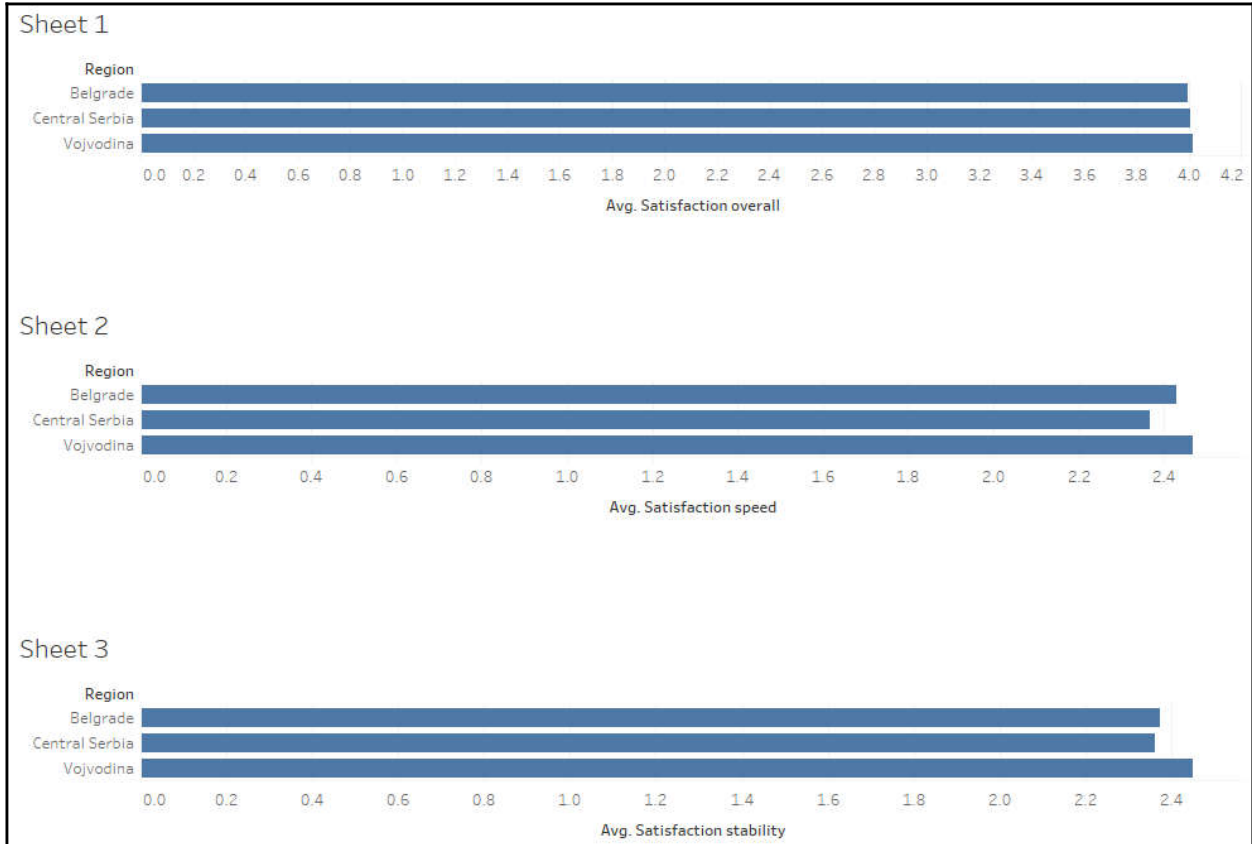
Filter will be applied to **2** worksheets.

Enter search text

Worksheets	Relationship
<input checked="" type="checkbox"/> Sheet 1	Area (Internet_usage)
<input checked="" type="checkbox"/> Sheet 2	Region (Internet_satisfaction)

 Show only selected worksheets





Actions ✕

Connect sheets to external web resources using URL actions, or to other sheets in the same workbook using Filter actions and Highlight actions.

Name	Run On	Source	Fields

Show actions

Add Action >
Filter...
Highlight...
URL...

Edit...
Remove

OK
Cancel

Add Highlight Action ✕

Name: ▶

Source Sheets:

▼ Run action on:

- Sheet 1
- Sheet 2
- Sheet 3

Target Sheets

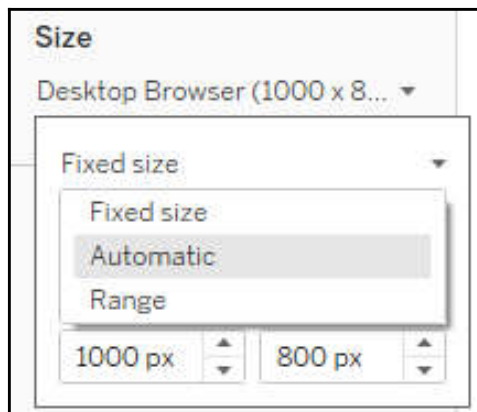
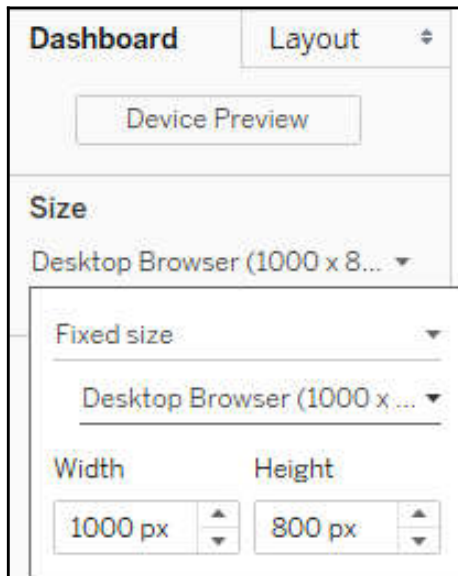
▼

- Sheet 1
- Sheet 2
- Sheet 3

Target Highlighting

Selected Fields Dates and Times All Fields

Region



Size

min 1000x800 - max 1100x... ▾

Range ▾

Minimum size

Width Height

1000 px 800 px

Maximum size


Width Height

1100 px 900 px

Dashboard Layout ▾

Device Preview

Device Preview Device type ▾ Phone ▸ Model ▾ Generic Phone (375 x 667) ▸  Tableau Mobile app Add Phone Layout

Dashboard | Layout 

Default
Tablet
Phone

Device Preview

Size - Phone

- Default
- Fit all
- Fit width

Height

Layout - Phone

Default | Custom

The content and layout of the dashboard on all devices will match the Default dashboard.

Click "Custom" to change how the dashboard will look for the devices.

Layout - Tablet

Default

Custom

The content and layout of the dashboard on all devices will match the Default dashboard.

Click "Custom" to change how the dashboard will look for the devices.

Data

Analytics

Internet_satisfaction

Internet_usage

Dimensions

Create Calculated Field...

Create Parameter...

Group by Folder

• Group by Data Source Table

• Sort by Name

Sort by Data Source Order

Hide All Unused Fields

Show Hidden Fields

Create Parameter ✕

Name: Comment >>

Properties

Data type: ▼

Current value: ▼

Display format: ▼

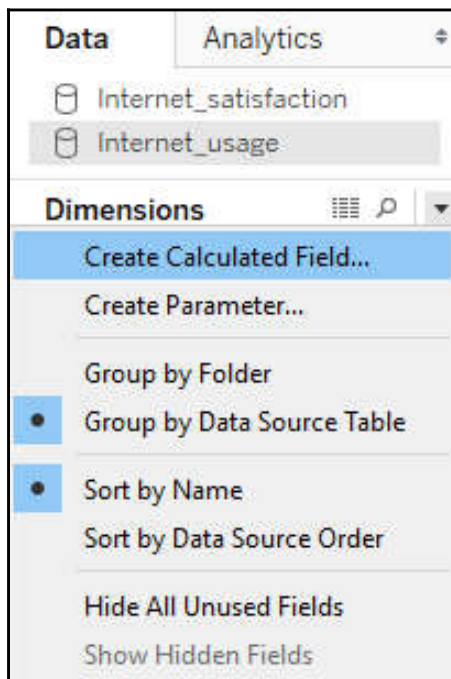
Allowable values: All List Range

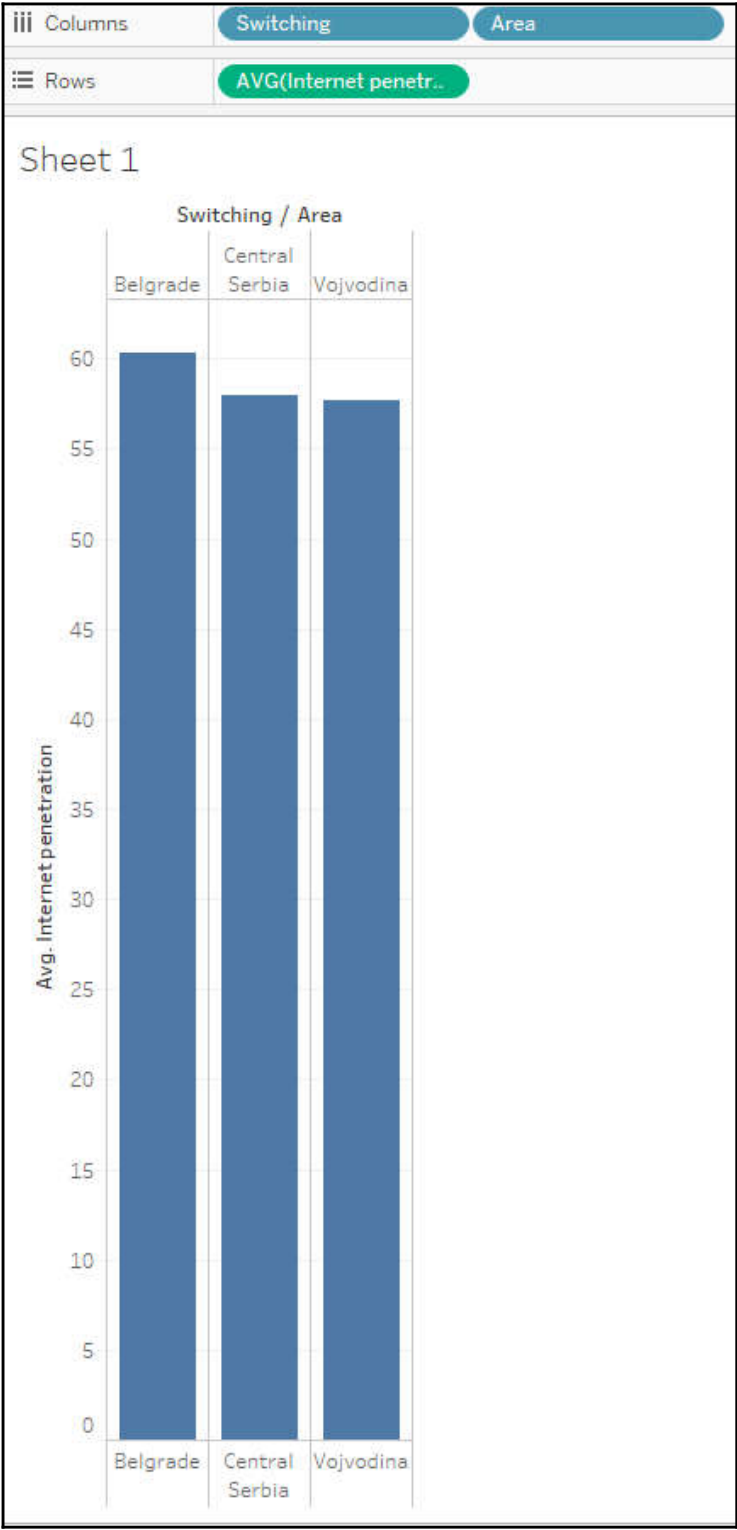
List of values

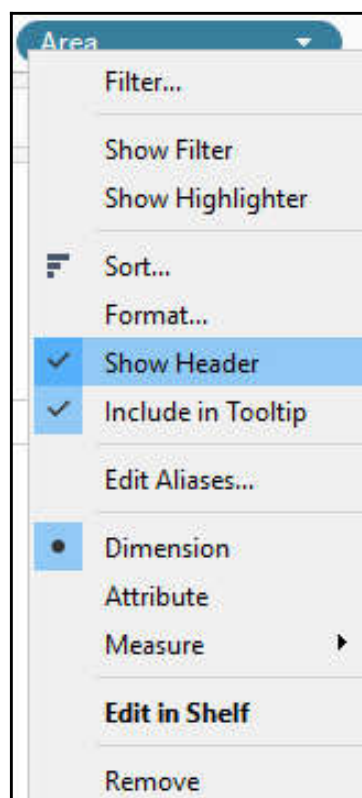
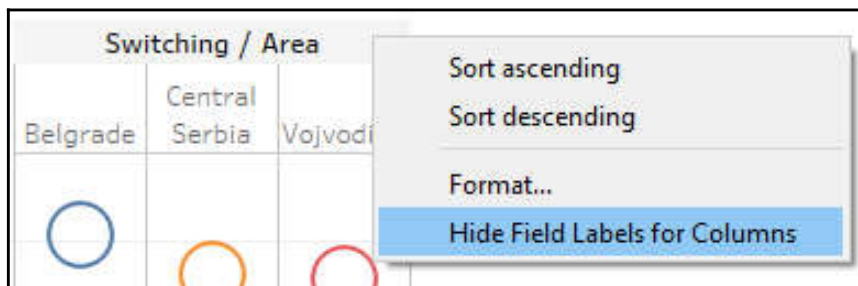
Value	Display As
Region	Region
Settlement Type	Settlement Type
Add	

▶
 ▶

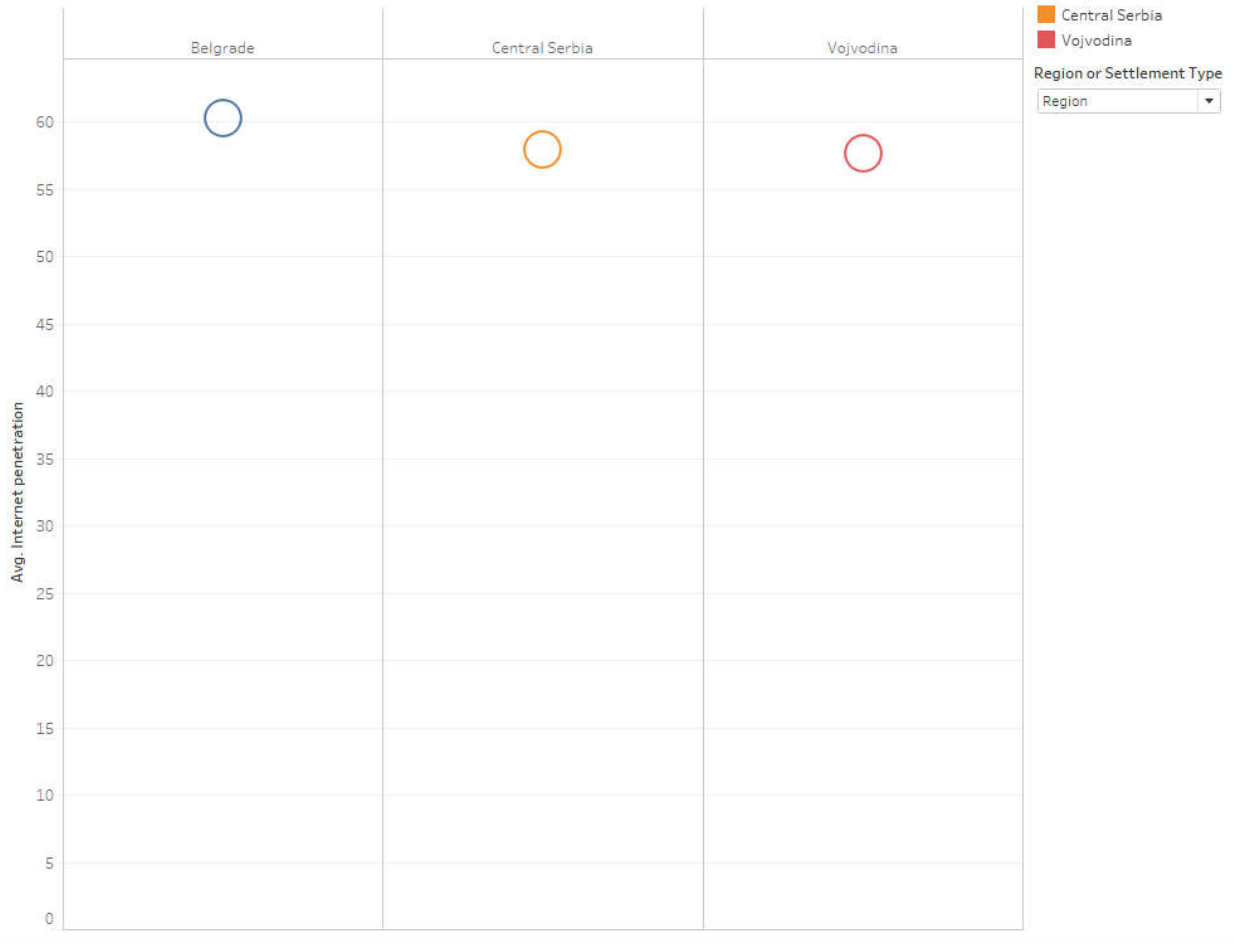
	Add to Sheet
	Show Parameter Control
	Cut
	Copy
	Edit...
	Duplicate
	Rename
	Hide
	Delete
	Create ▶
	Default Properties ▶
	Folders ▶
	Replace References...
	Describe...
Measures	
# Internet penetration	
-# <i>Number of Records</i>	
# <i>Measure Values</i>	
Parameters	
Abc Region or Settlement T...	

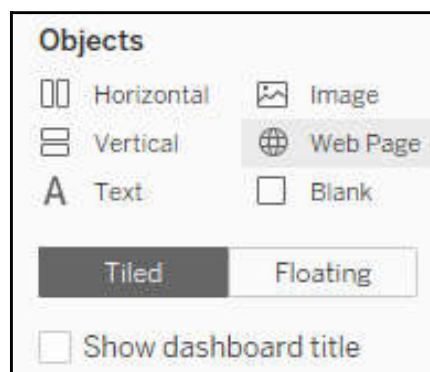
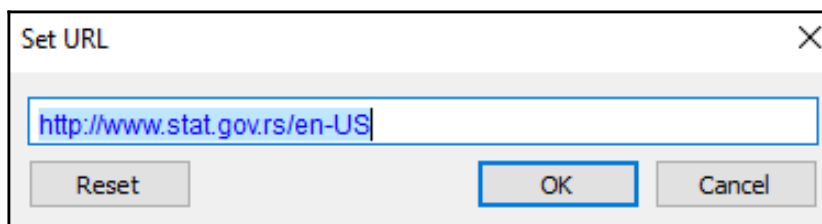
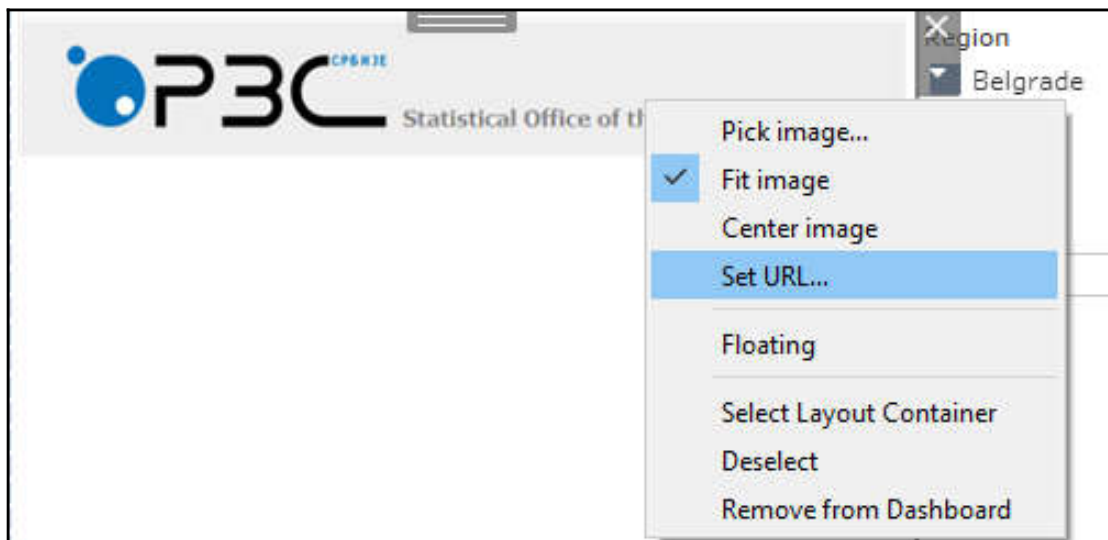






Sheet 1





Sheet 1

Region	Avg. Internet penetration
Belgrade	60
Central Serbia	55
Vojvodina	55

Region

- Belgrade
- Central Serbia
- Vojvodina

Region or Settlement Type

Region

Main provider

- Other
- Provider 1
- Provider 2
- Provider 3
- Provider 4
- Provider 5
- Provider 6
- Provider 7

Statistical Office of the Republic of Serbia

Go to Sheet
Duplicate Sheet
Fit
Use as Filter
Ignore Actions
Floating
Select Layout Container
Deselect
Remove from Dashboard

Region	Avg. Satisfaction stability	Avg. Satisfaction speed
Belgrade	3.0	3.0
Central Serbia	2.0	2.0
Vojvodina	2.0	2.0
Other	2.5	2.5
Provider 1	2.2	2.2
Provider 2	2.3	2.3
Provider 3	2.4	2.4
Provider 4	2.5	2.5
Provider 5	2.6	2.6
Provider 6	2.7	2.7
Provider 7	2.8	2.8

Global Internet usage

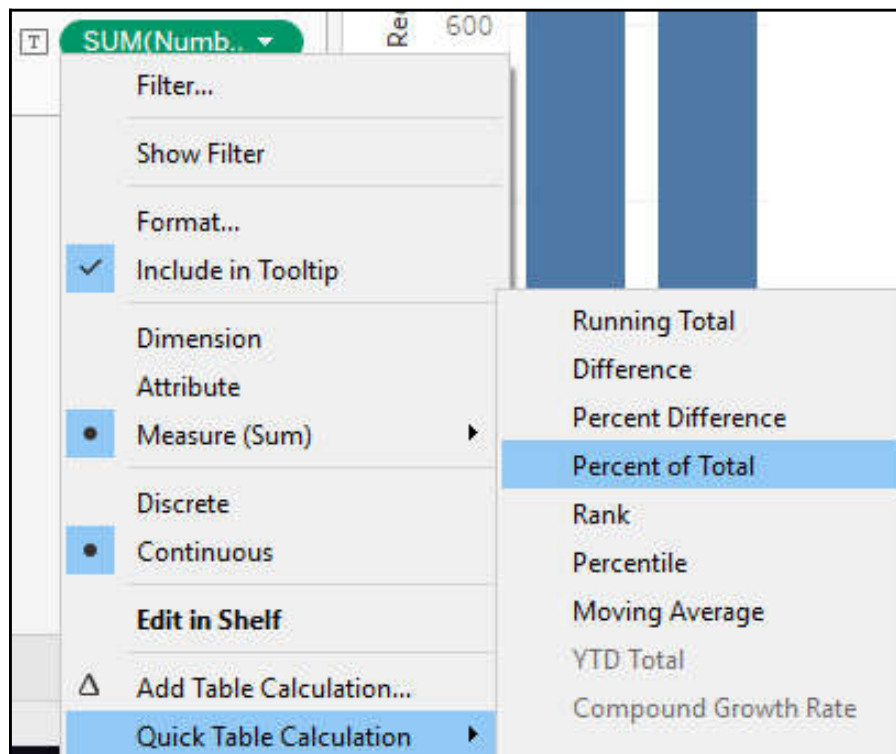
From Wikipedia, the free encyclopedia

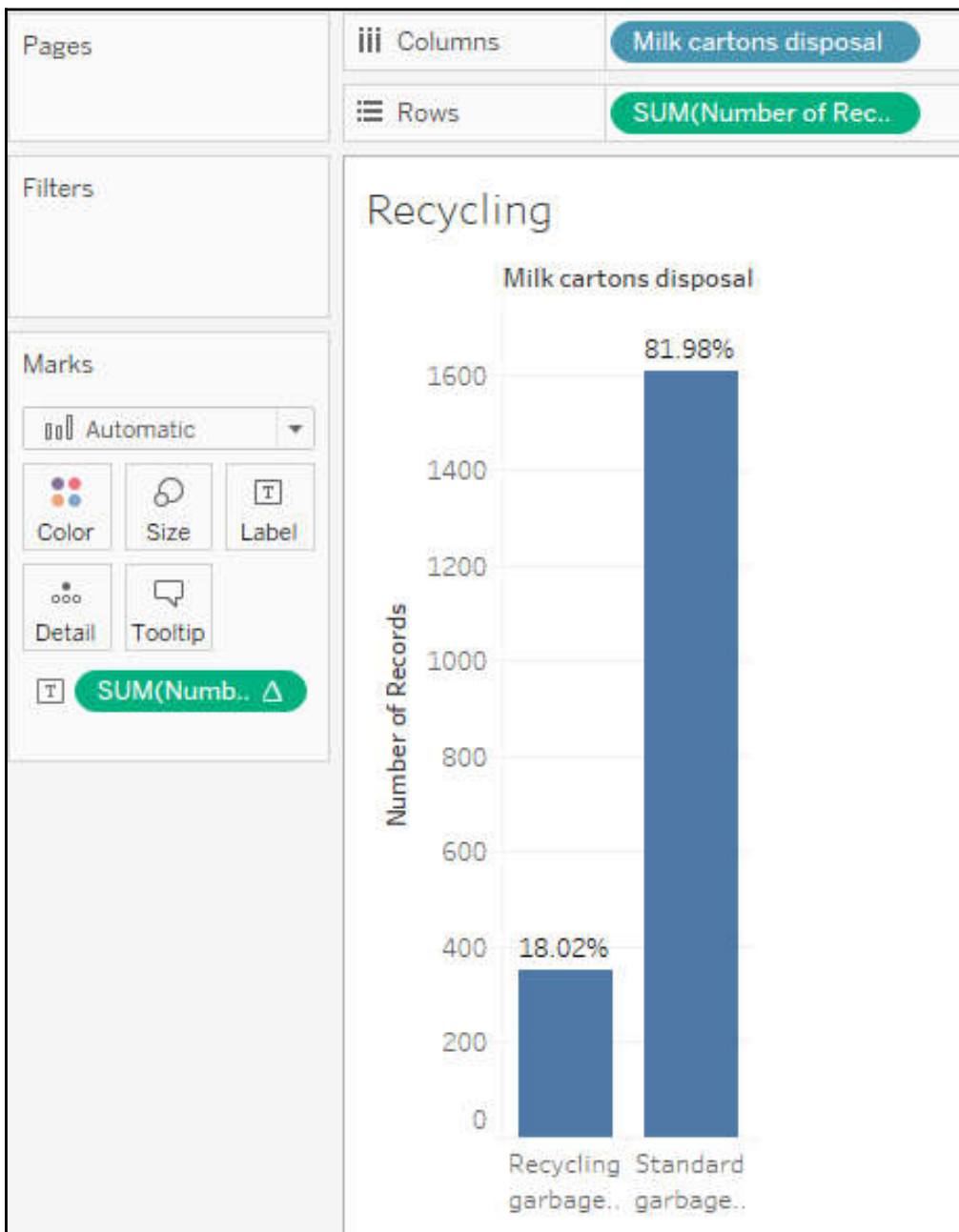
Global Internet usage refers to the number of people who use the Internet worldwide, which can be displayed using tables, charts, maps and articles which contain more detailed information on a wide range of usage measures.

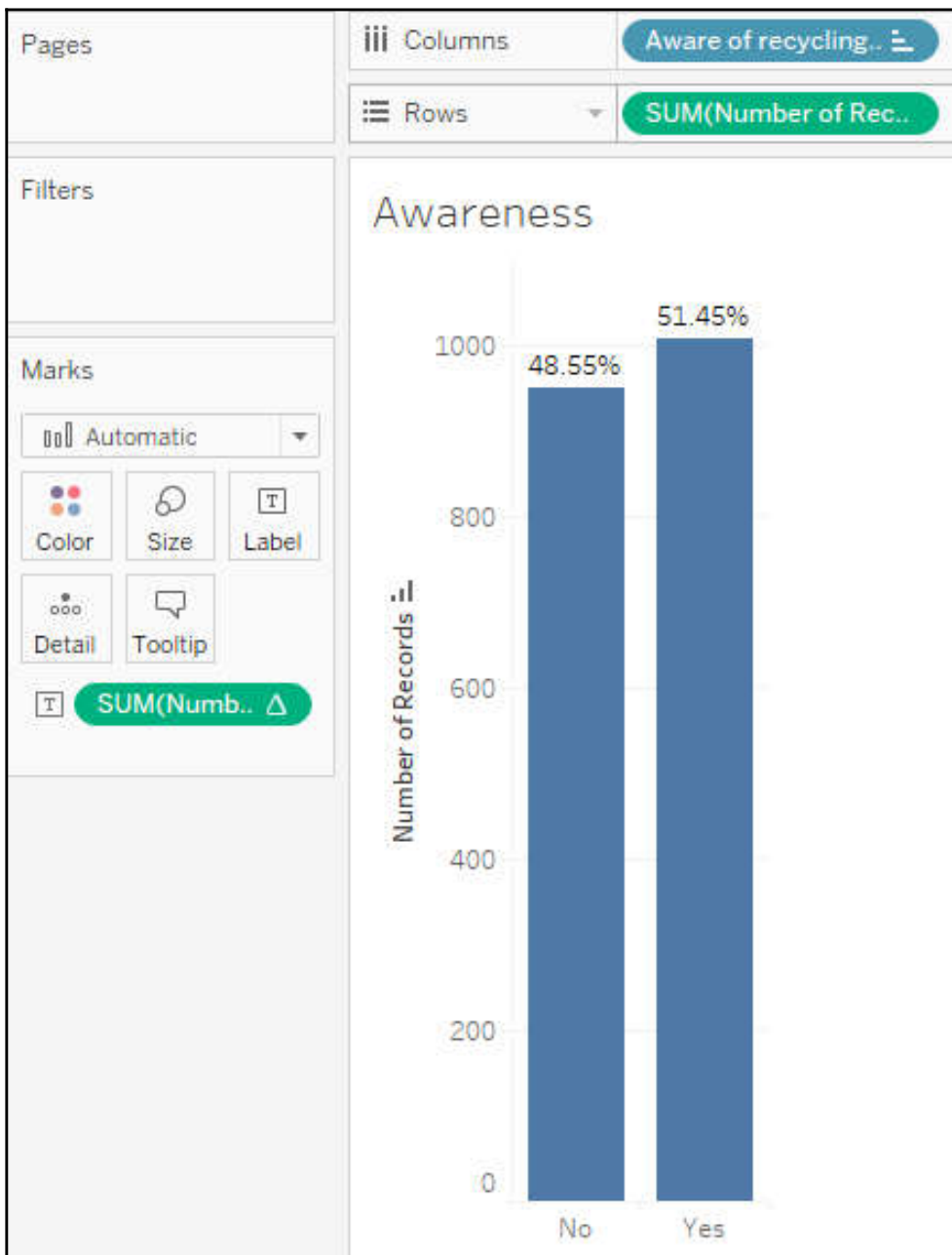
Contents [hide]

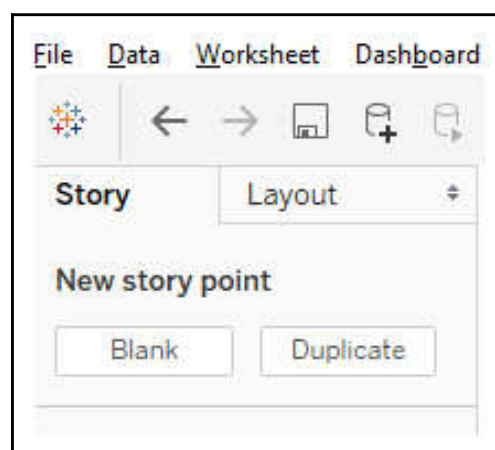
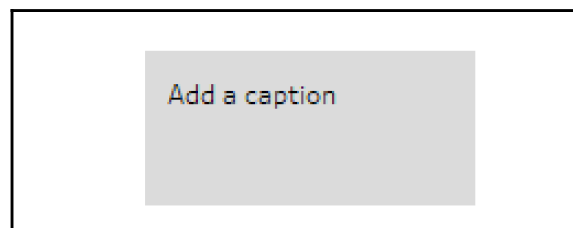
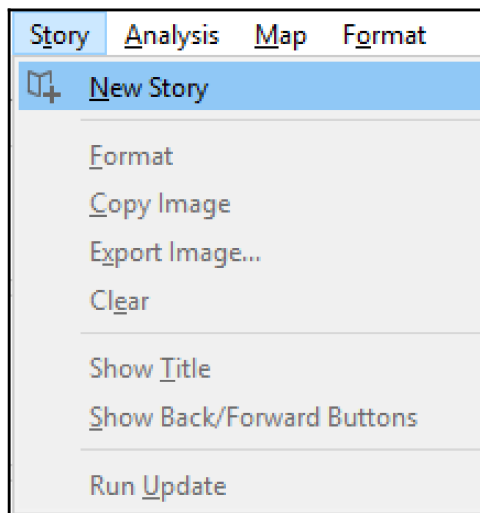
- Internet users
- Broadband usage
- Internet hosts
- Web index
- IPv4 addresses

Chapter 7: Telling a Story with Tableau

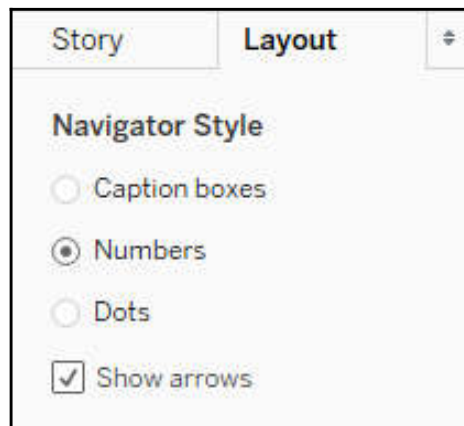


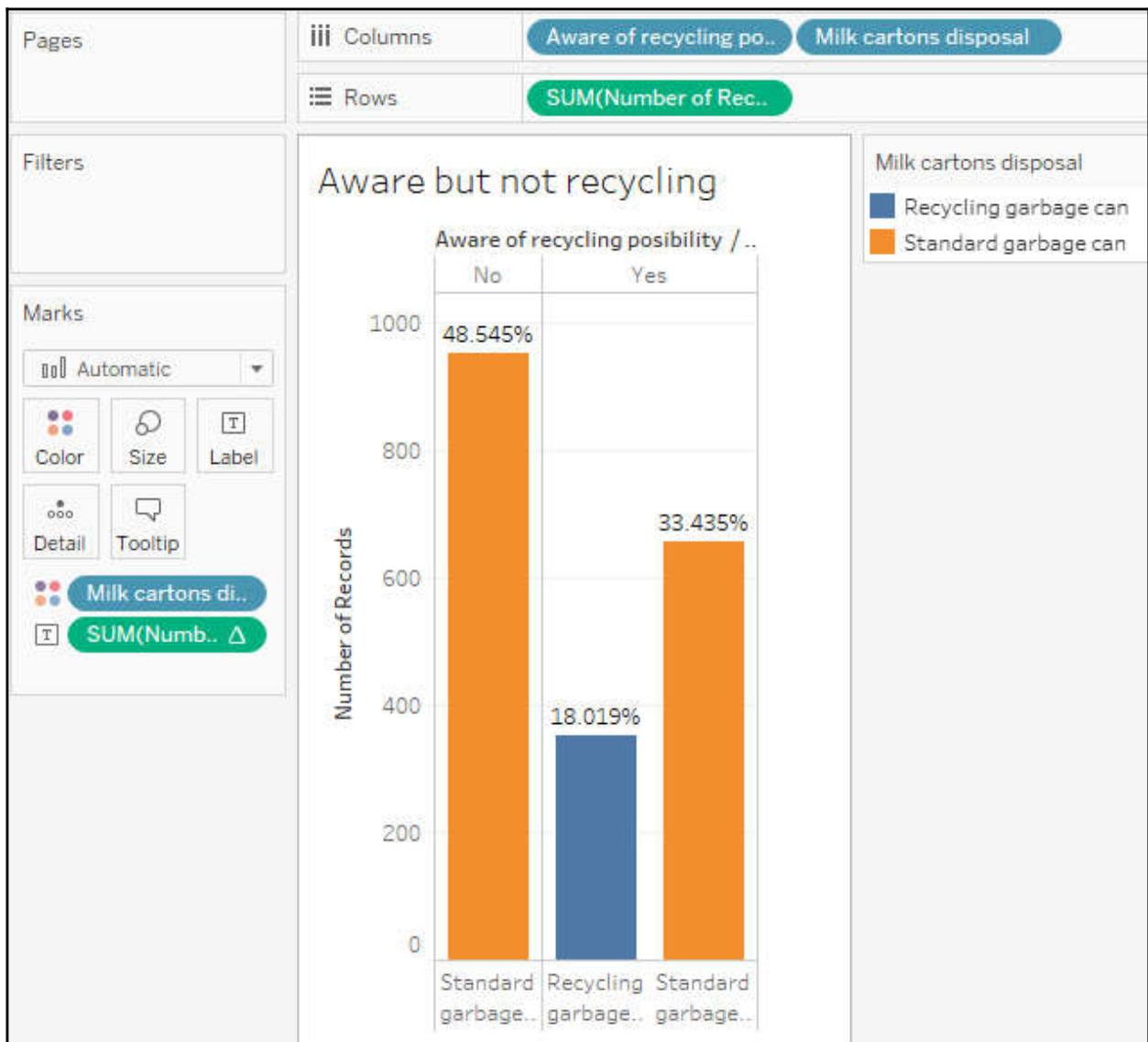


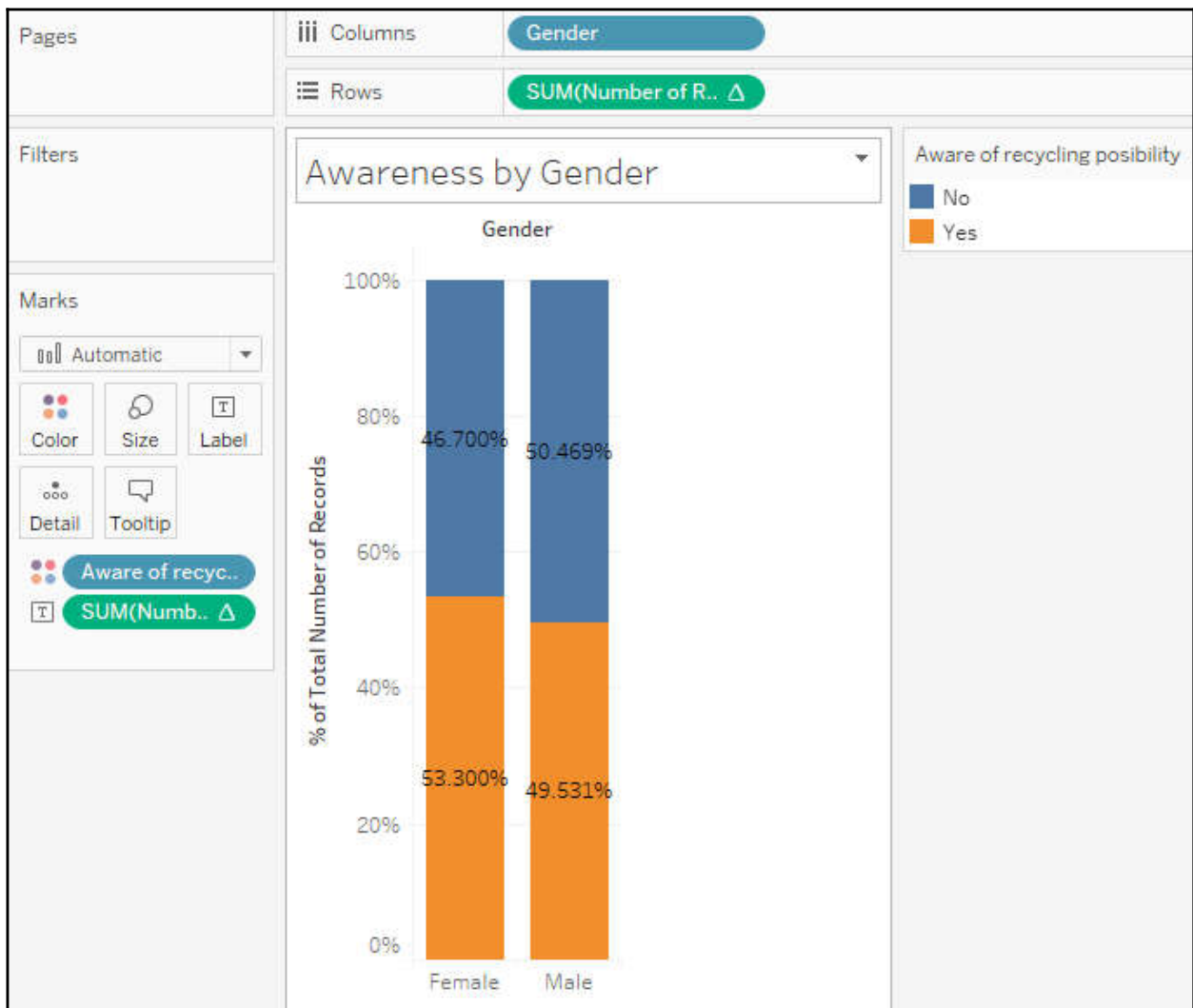


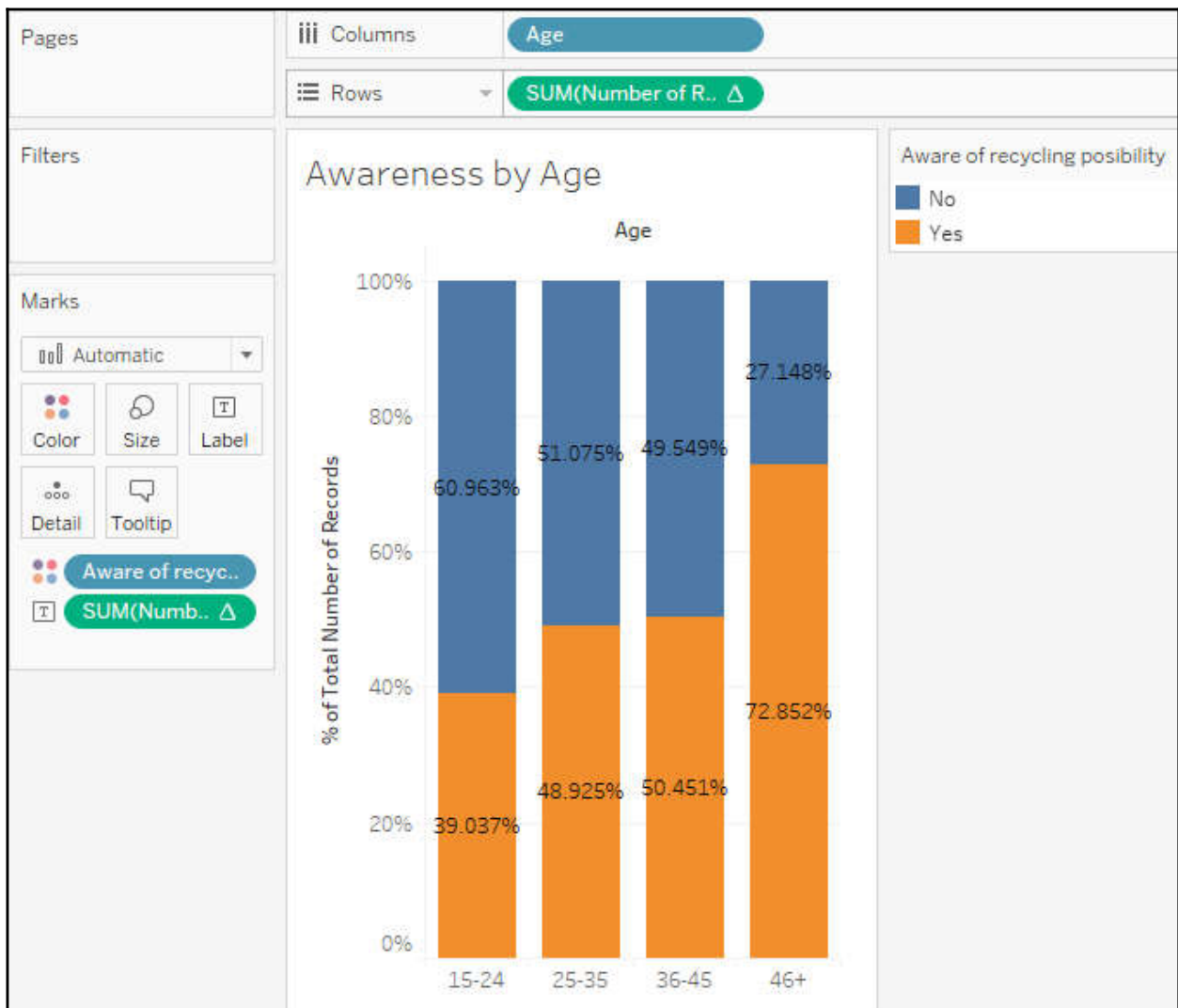


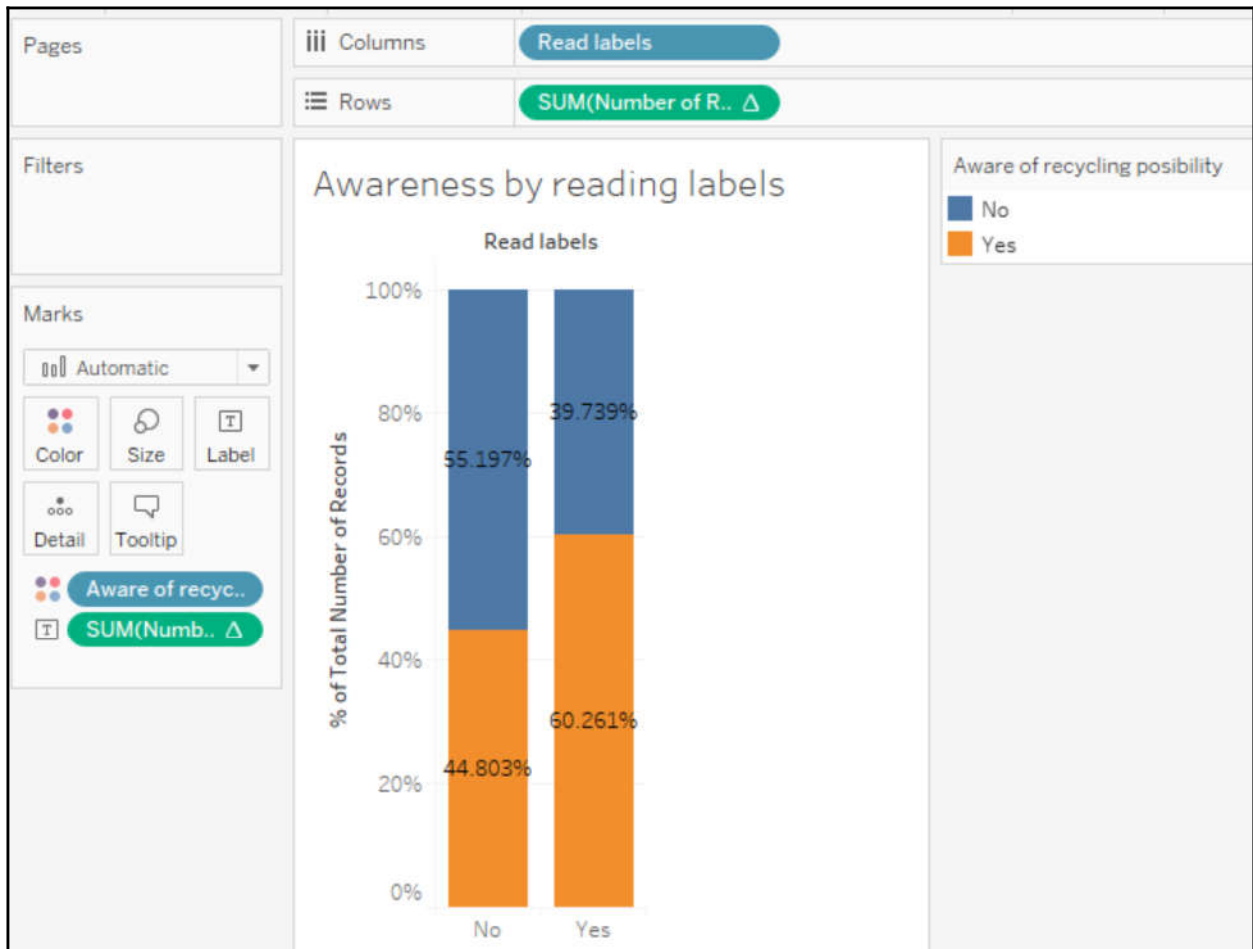
Effectiveness of Recycling Promotion

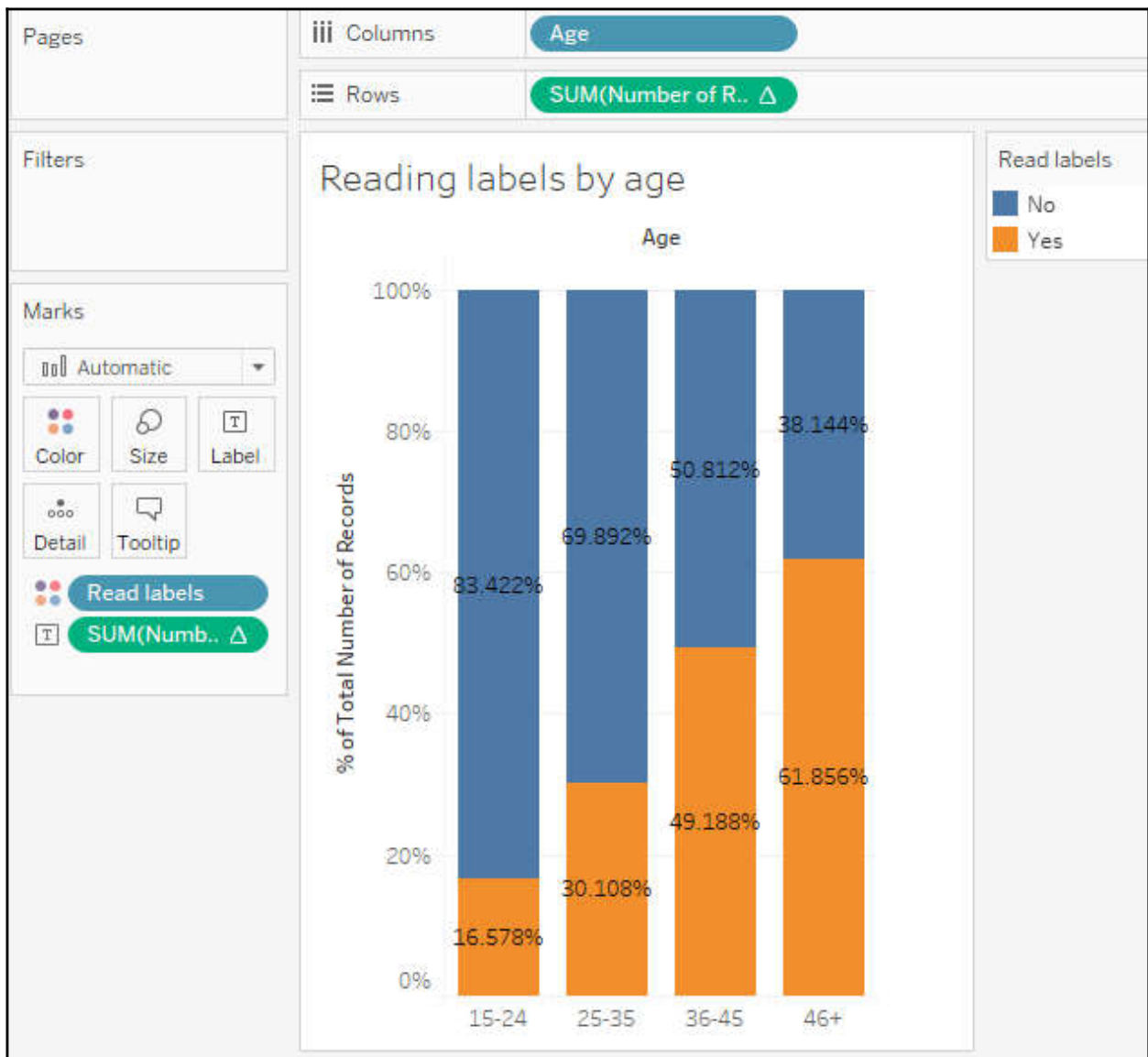


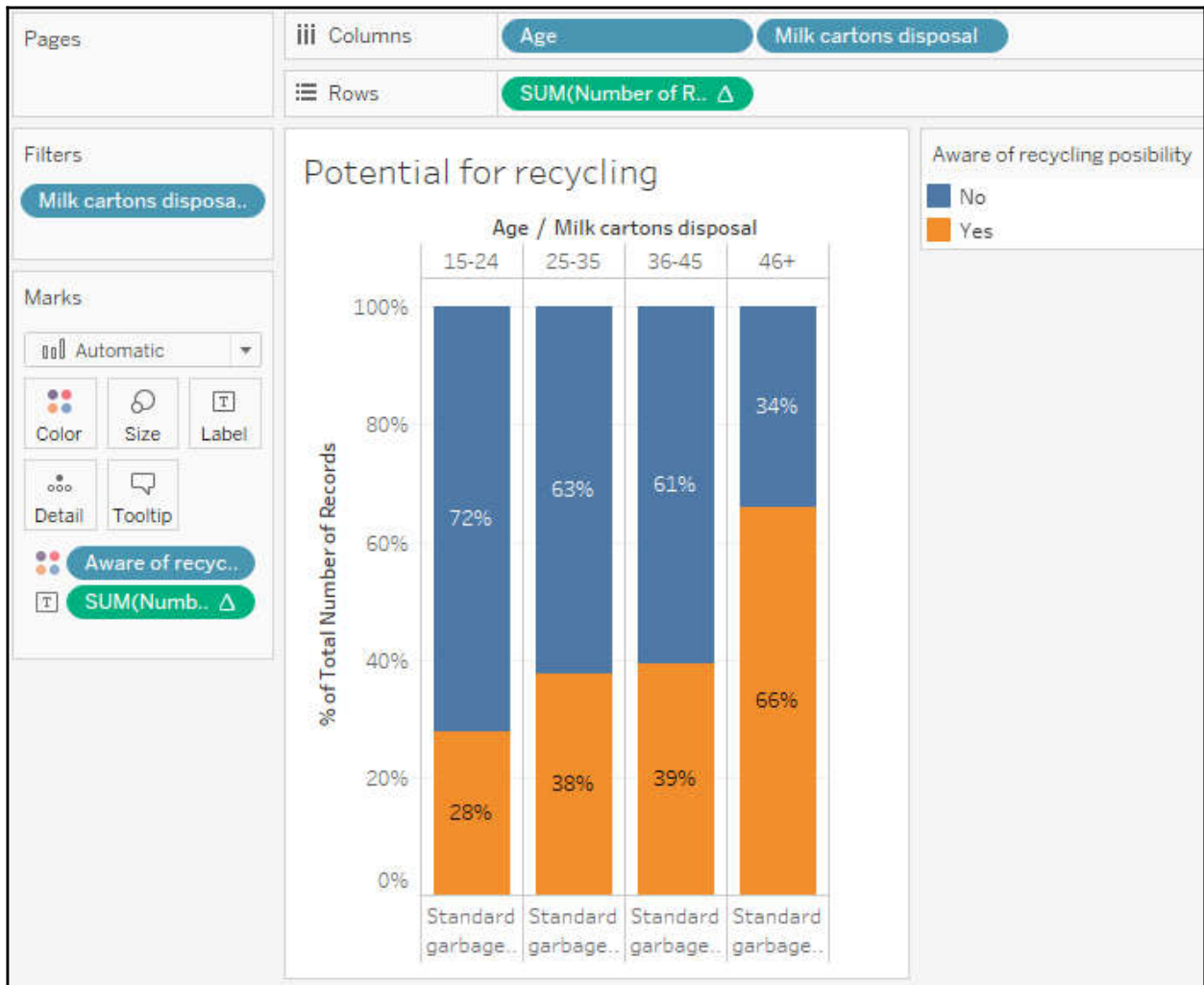

















Story Layout ↕

New story point

Blank Duplicate

-  Awareness
-  Recycling
-  Aware but not recycl...
-  Awareness by Gender
-  Awareness by Age
-  Awareness by readi...
-  Reading labels by age 

New story point

Blank
Duplicate

- Awareness
- Recycling
- Aware but not recycl...
- Awareness by Gender
- Awareness by Age
- Awareness by readi...
- Reading labels by age ↗

A Drag to add text

Show title

Size

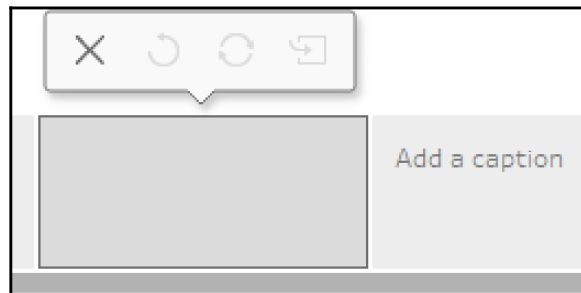
Laptop Browser (800 x 600) ▼

<
Add a caption
Add a caption
Add a caption

Age

Age Group	Orange Segment (%)	Blue Segment (%)
15-24	16.578%	83.422%
25-35	30.108%	69.892%
36-45	49.188%	50.812%
46+	61.856%	38.144%

<
Add a caption
Add a caption

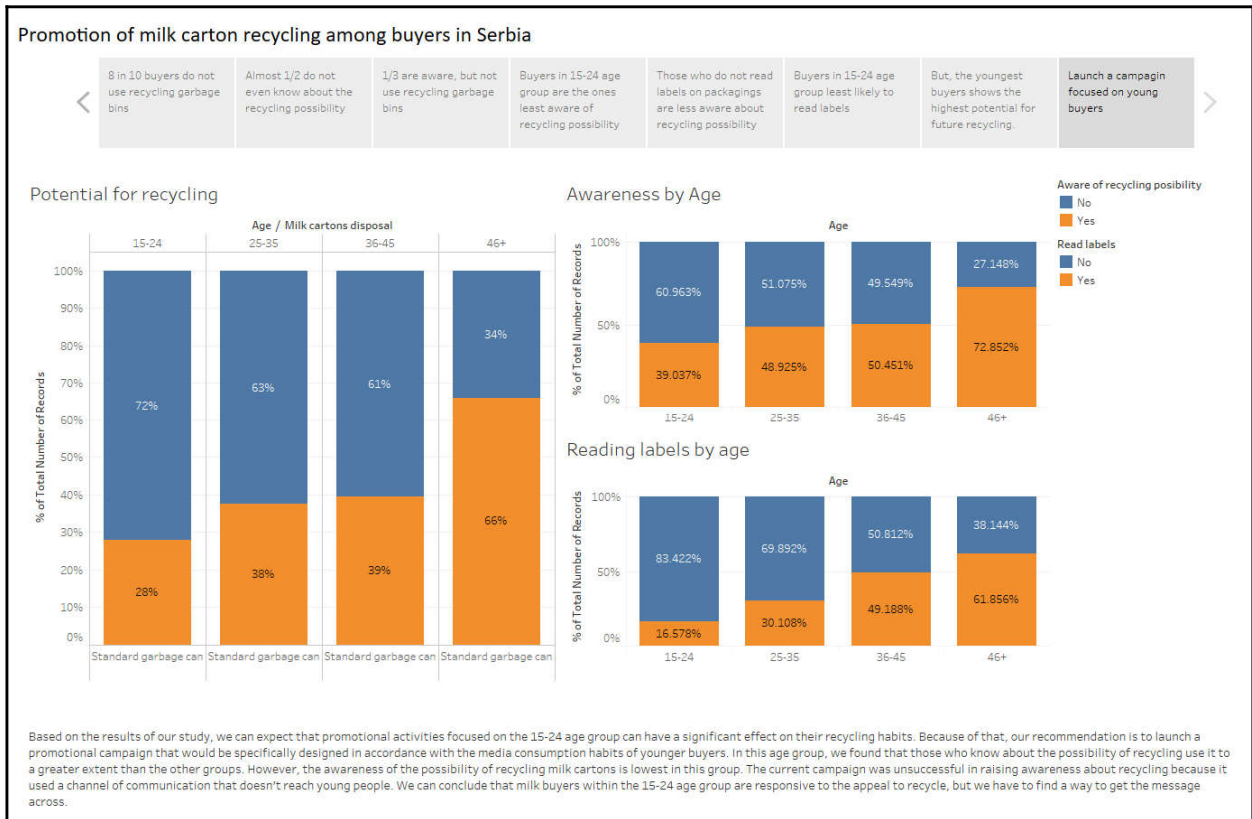
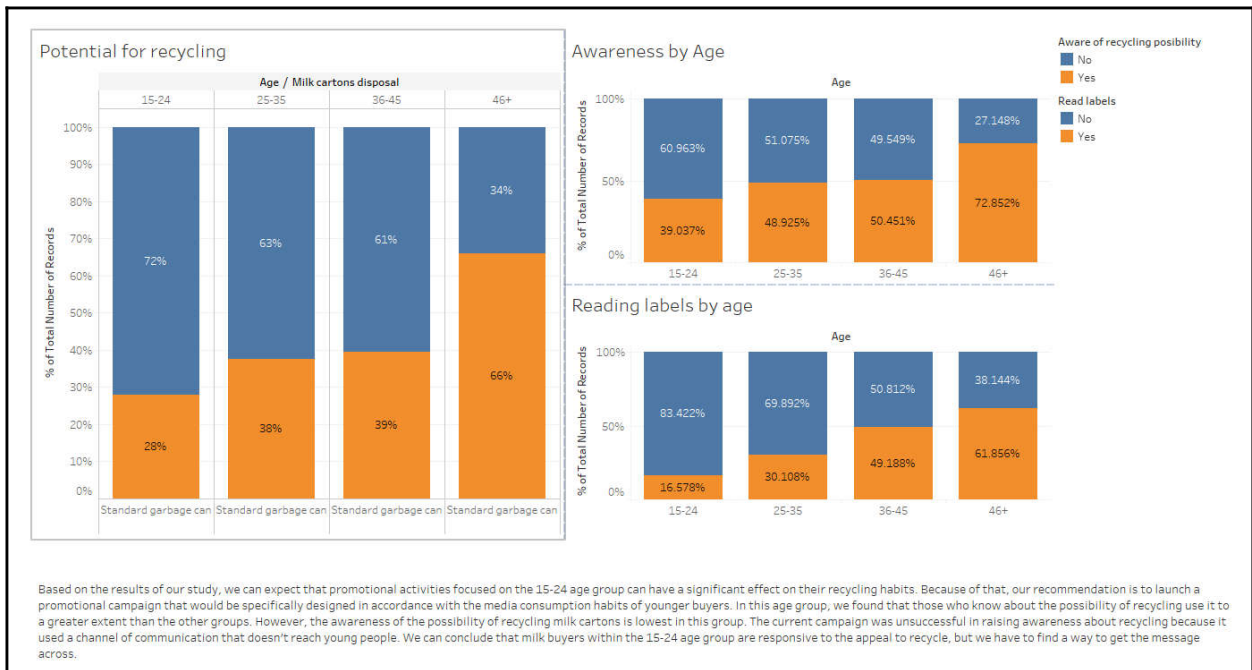


Objects

- Horizontal
- Vertical
- Text
- Image
- Web Page
- Blank

Tiled Floating

Show dashboard title



Format % of Total SUM(...) x

A [grid icon] [table icon] [list icon] Fields ▾

Axis Pane

Default

Font: Tableau .. ▾

Alignment: Automatic ▾

Numbers: 1234560... ▾

Totals

Font: Tableau .. ▾

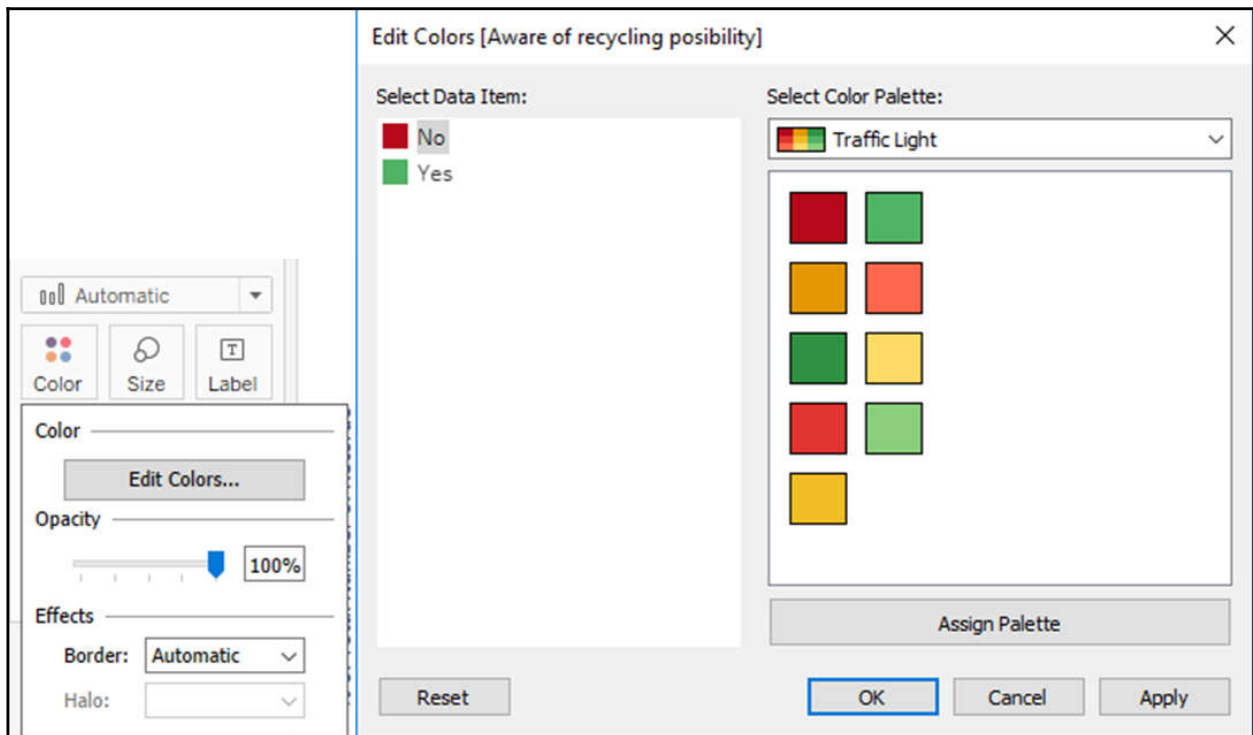
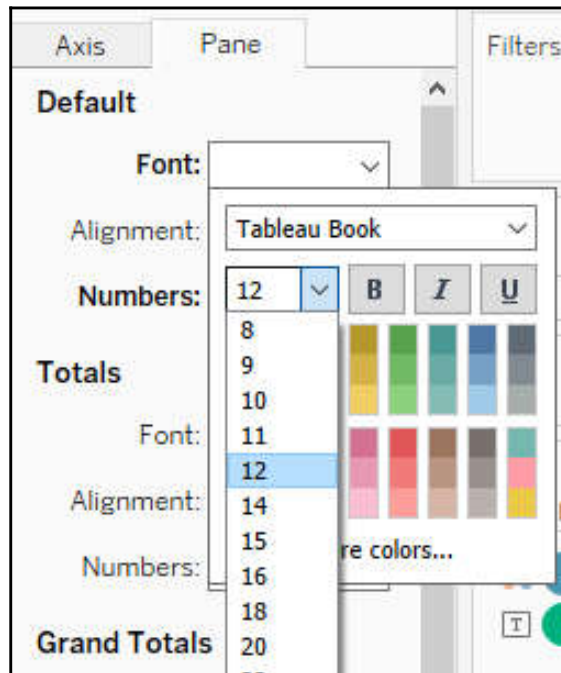
Alignment: Automatic ▾

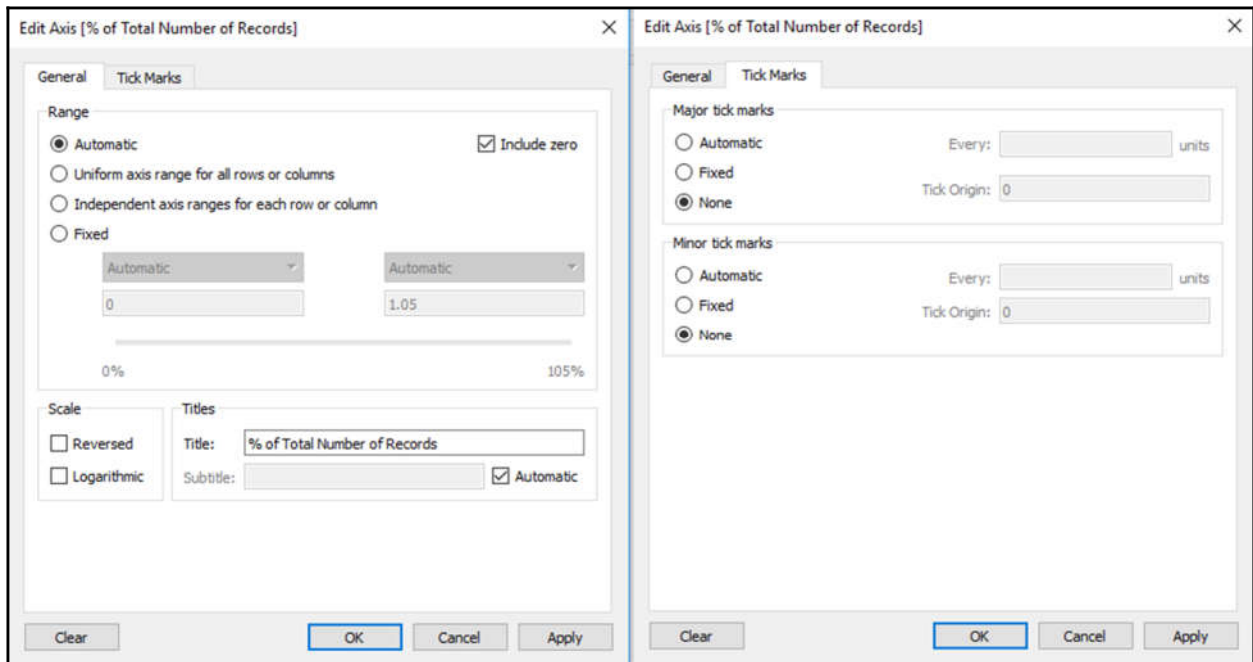
Numbers: 1234560... ▾

- Automatic
- Number (Standard)
- Number (Custom)
- Currency (Standard)
- Currency (Custom)
- Scientific
- Percentage**
- Custom

Percentage

Decimal places: 0 ▾





The image shows the 'Format Age' dialog box in Tableau. At the top, there is a toolbar with icons for undo, redo, save, add, and refresh. Below the toolbar, the dialog is titled 'Format Age' with a close button. A secondary toolbar contains a font icon, a list icon, a selection tool, a grid icon, a list icon, and a 'Fields' dropdown menu. Two tabs are visible: 'Header' and 'Pane', with 'Pane' selected. The 'Default' section includes a 'Font' dropdown set to 'Tableau Boo..', an 'Alignment' dropdown set to 'Automatic', and a 'Numbers' dropdown. The 'Totals' section features a 'Shading' dropdown set to 'Tableau Book', a font size dropdown set to '12', and buttons for Bold (B), Italic (I), and Underline (U). Below these are three rows of color swatches for 'Font', 'Alignment', and 'Label'. The 'Font' row has 8 swatches, 'Alignment' has 8, and 'Label' has 8. A 'More colors...' link is located at the bottom of the color swatch area.

Awareness by Age



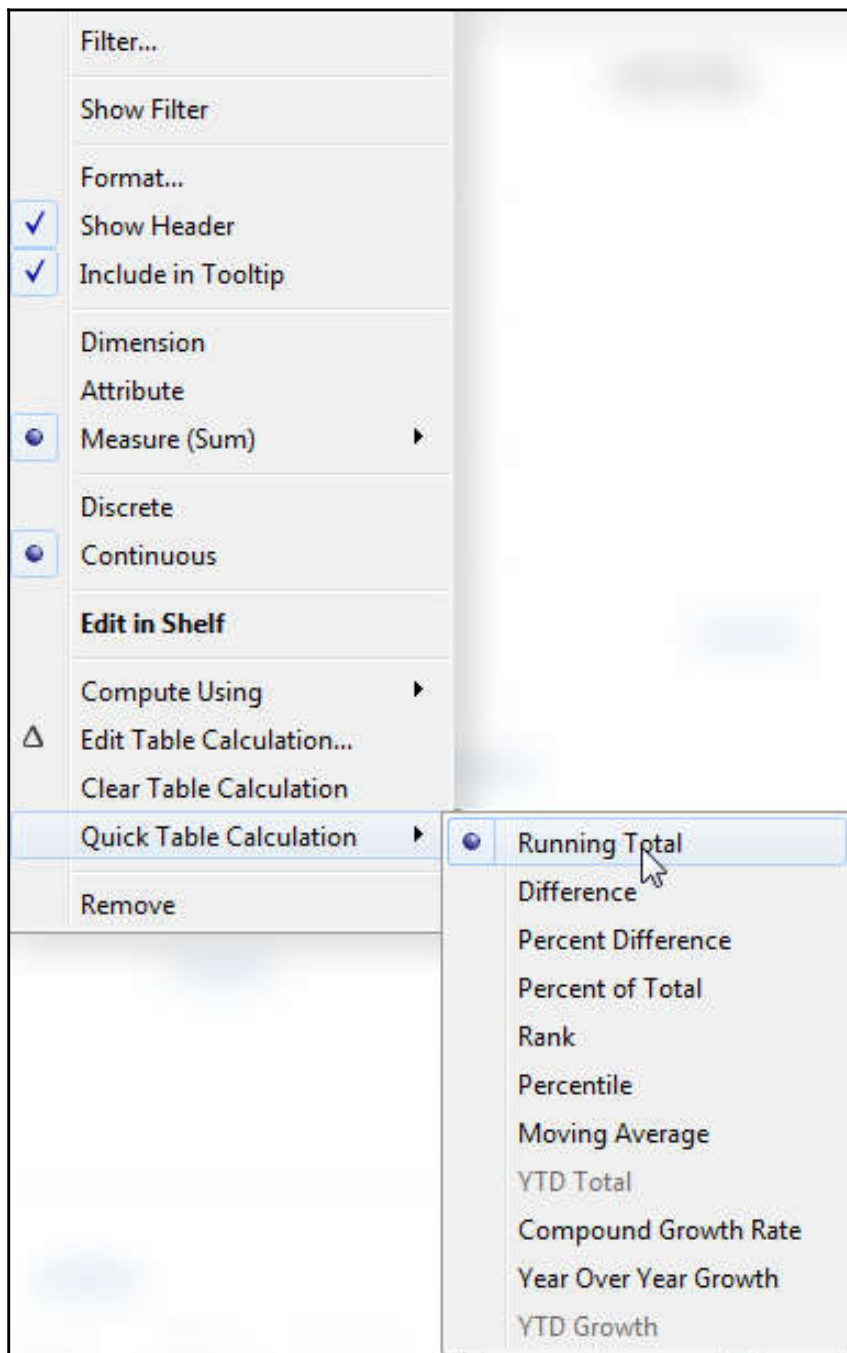
Aware of recycling possibility

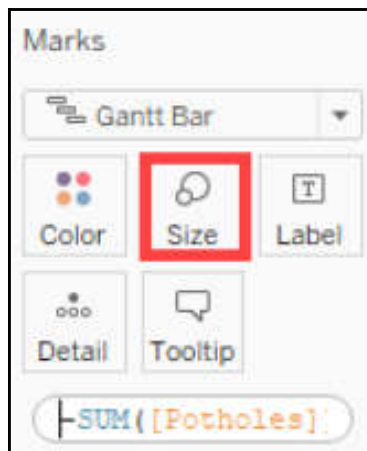
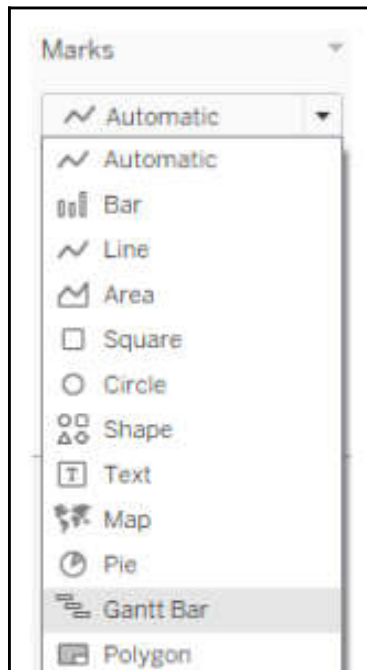
No

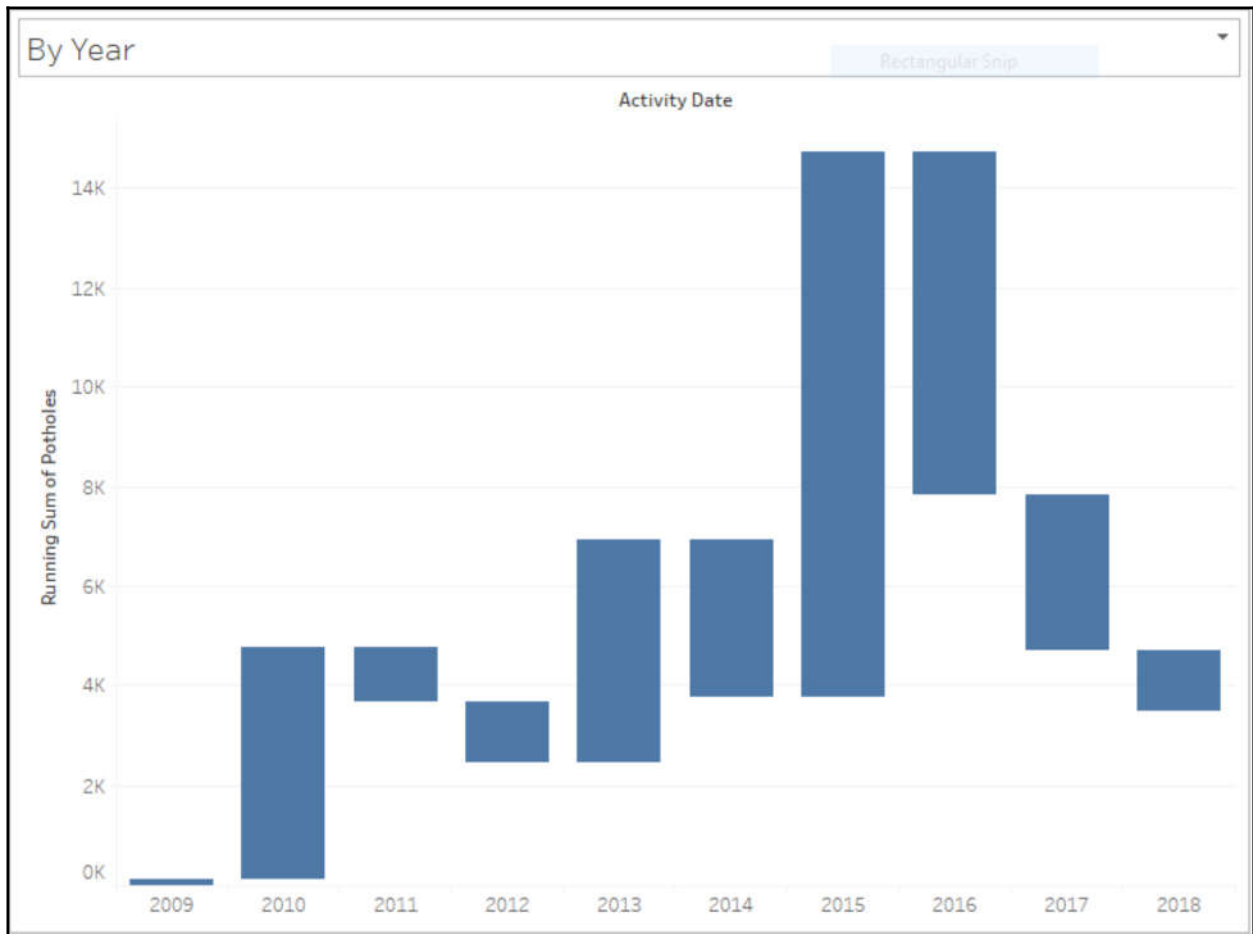
Yes

Chapter 8: Tableau Visualization

Columns	YEAR(Activity Dat..)
Rows	SUM(Potholes)













SUM(Potholes) △ SUM(Potholes) △

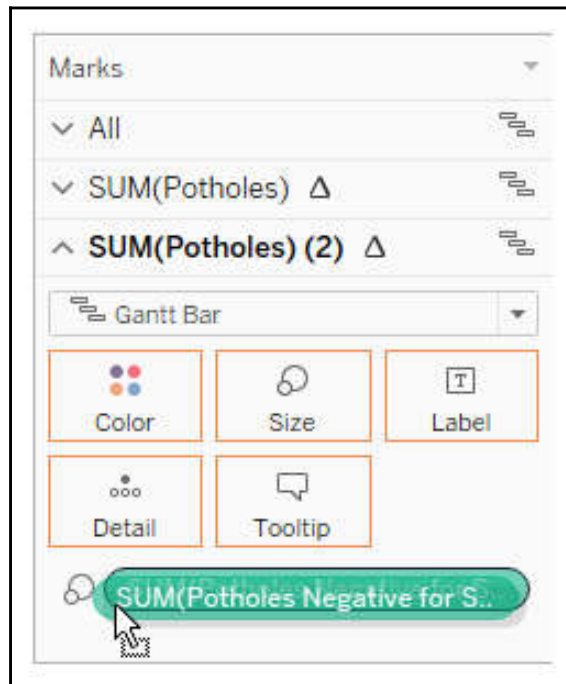
Marks

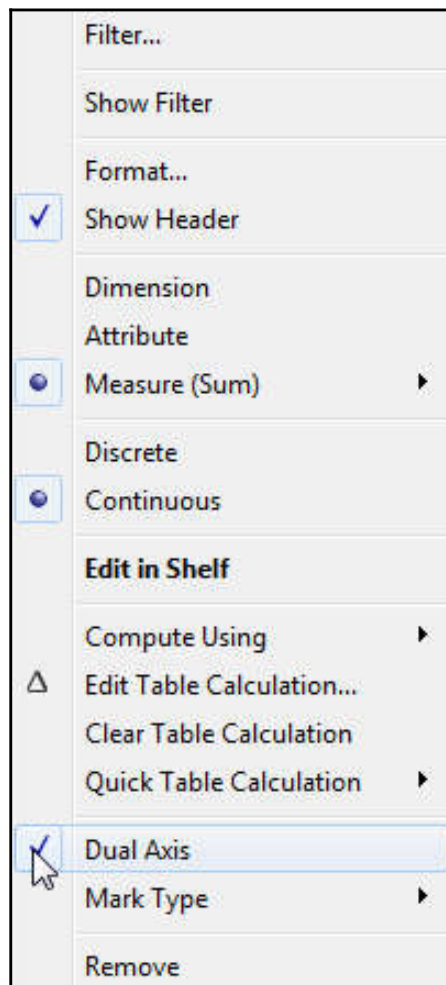
- ▼ All
- ▼ SUM(Potholes) Δ
- ▲ SUM(Potholes) (2) Δ

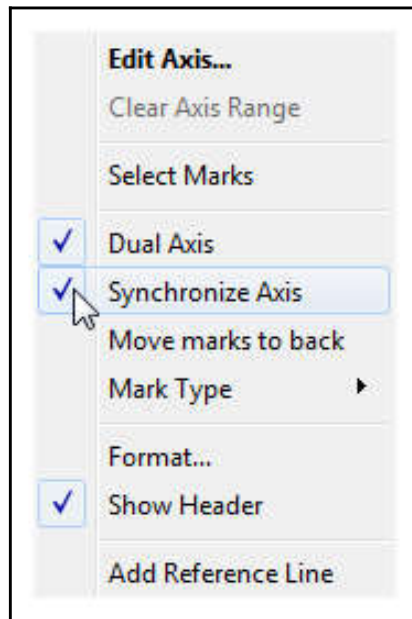
Gantt Bar

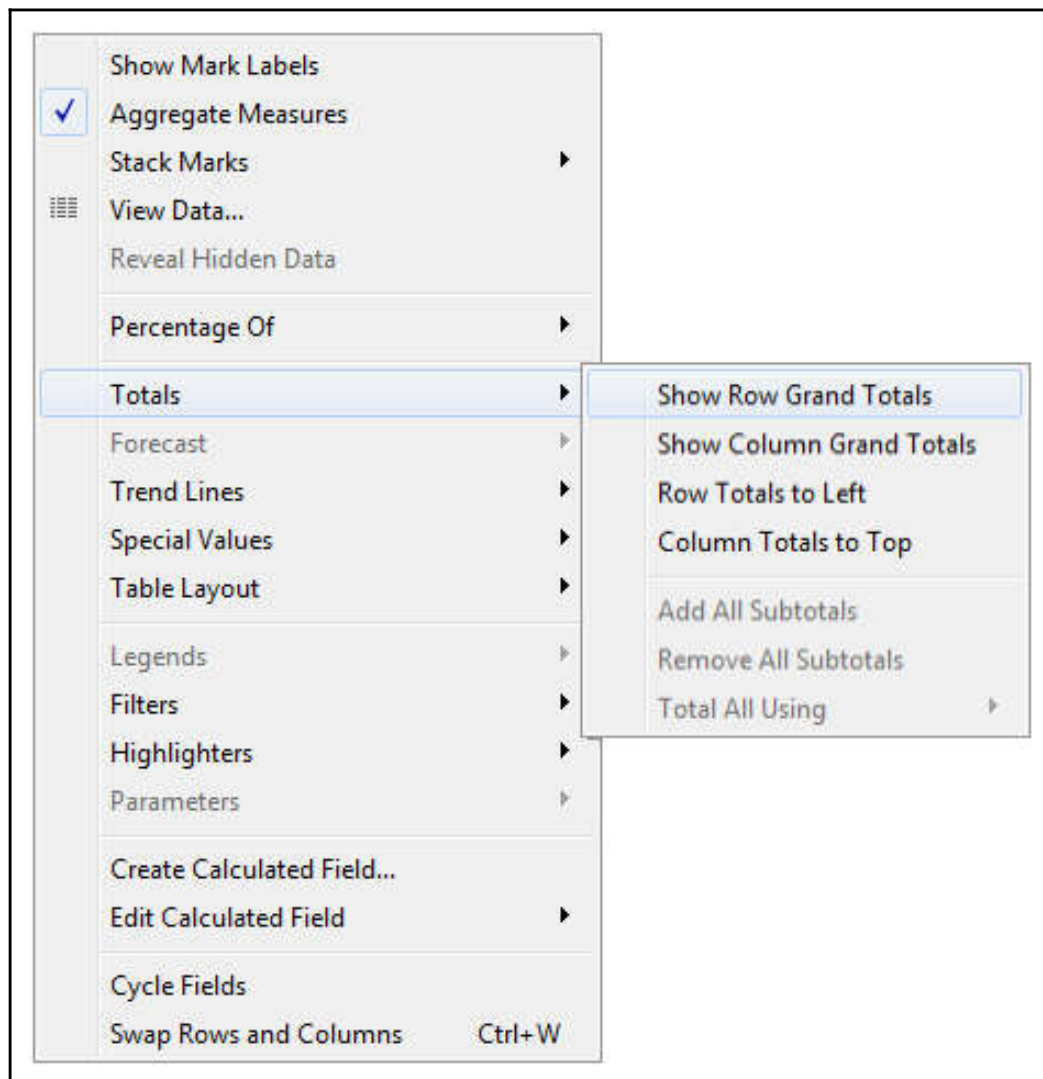
 Color	 Size	 Label
 Detail	 Tooltip	

 SUM(Potholes Negative for S..



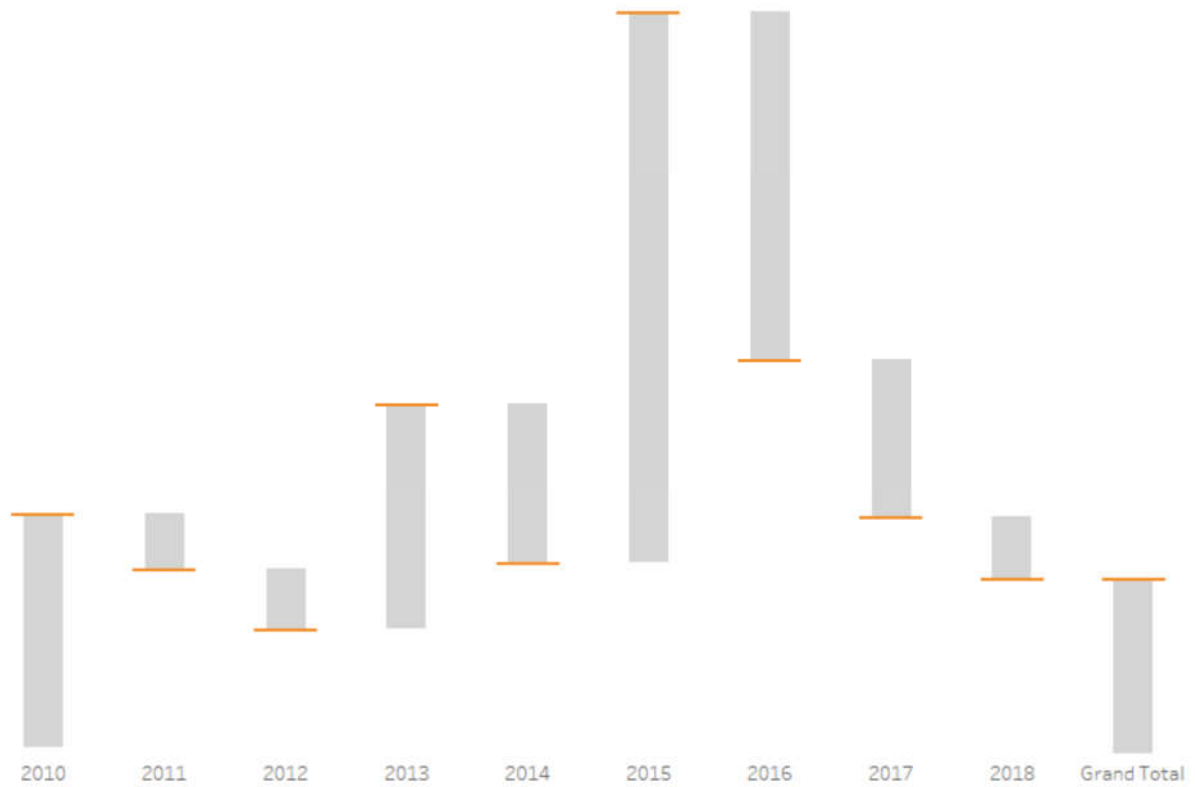






Chicago Pothole Submissions

How many potholes have been submitted (+) and fixed (-) annually?



Arrow Direction

```
If Sum([Potholes]) > 0 THEN 'Positive' ELSE 'Negative' End
```

Marks

- ▼ All
- ▼ SUM(Potholes) Δ
- ▲ **SUM(Potholes) (2)** Δ

○□ Shape

Color	Size	Label
Detail	Tooltip	Shape

AGG(Arrow Direction)

AGG(Arrow Direction)

Select Data Item:

- ▼ Negative
- ▲ Positive

Select Shape Palette:

Filled

Assign Palette Reload Shapes

Reset **OK** Cancel Apply

Chicago Pothole Submissions

How many potholes have been submitted and **fixed** annually?



Columns	Emission Type
Rows	SUM(Value)

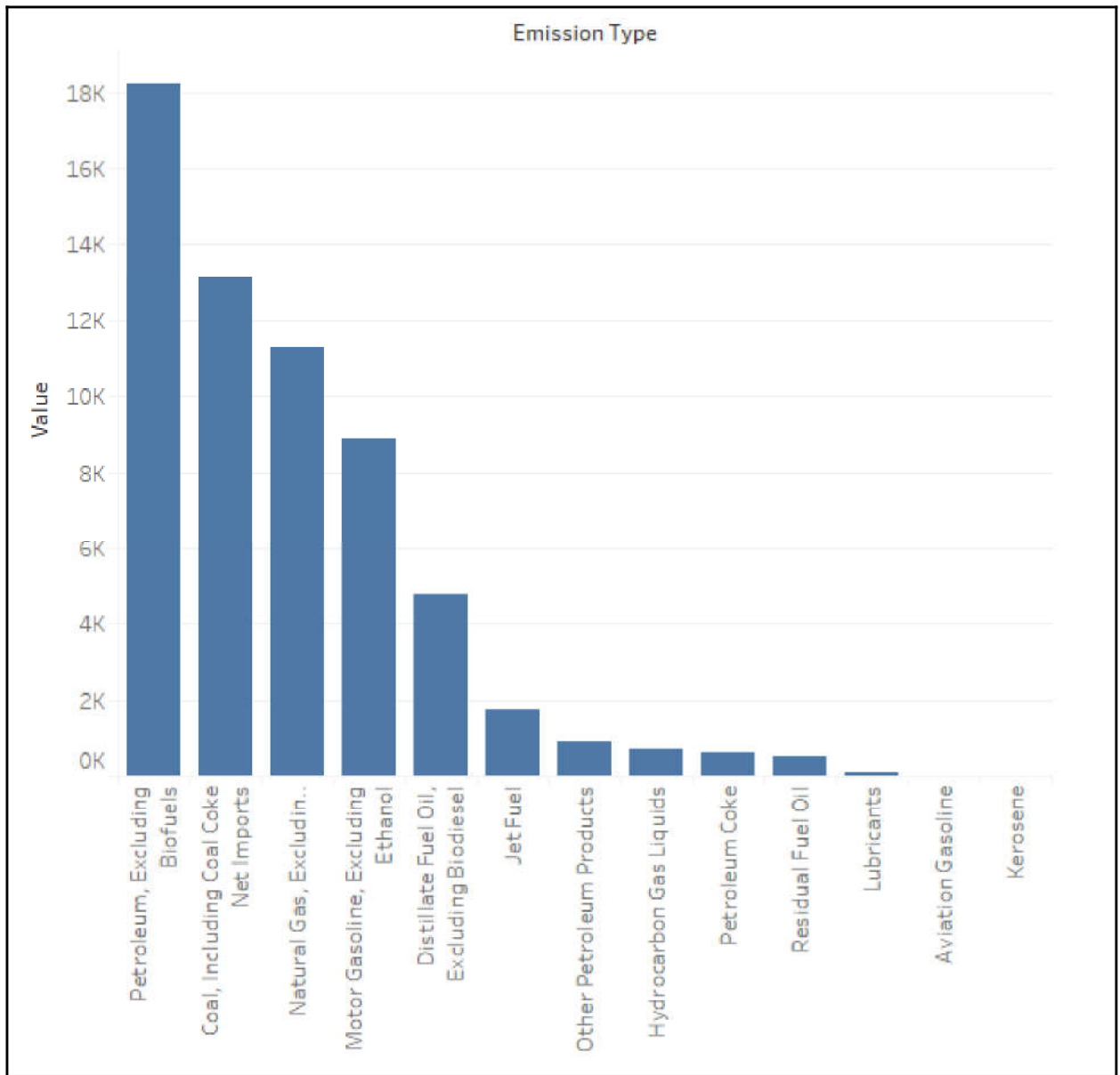


Table Calculation ✕

% of Total Running Sum of Distinct count of Emission Type

Primary Calculation Type

Running Total ▼

Sum ▼

Secondary Calculation Type

Percent of Total ▼

Compute total across all pages

Compute Using

Table (across)

Cell

Specific Dimensions

Emission Type

Restarting every ▼

Sort order Specific Dimensions ▼

Compute Using

Table (across)

Table (down)

Table

Cell

Specific Dimensions

Emission Type

At the level ▼

Sort order Specific Dimensions ▼

Add secondary calculation

Show calculation assistance

Summarize

- Constant Line
- Average Line
- Median with Qu...
- Box Plot
- Totals

Model

Filters

Marks

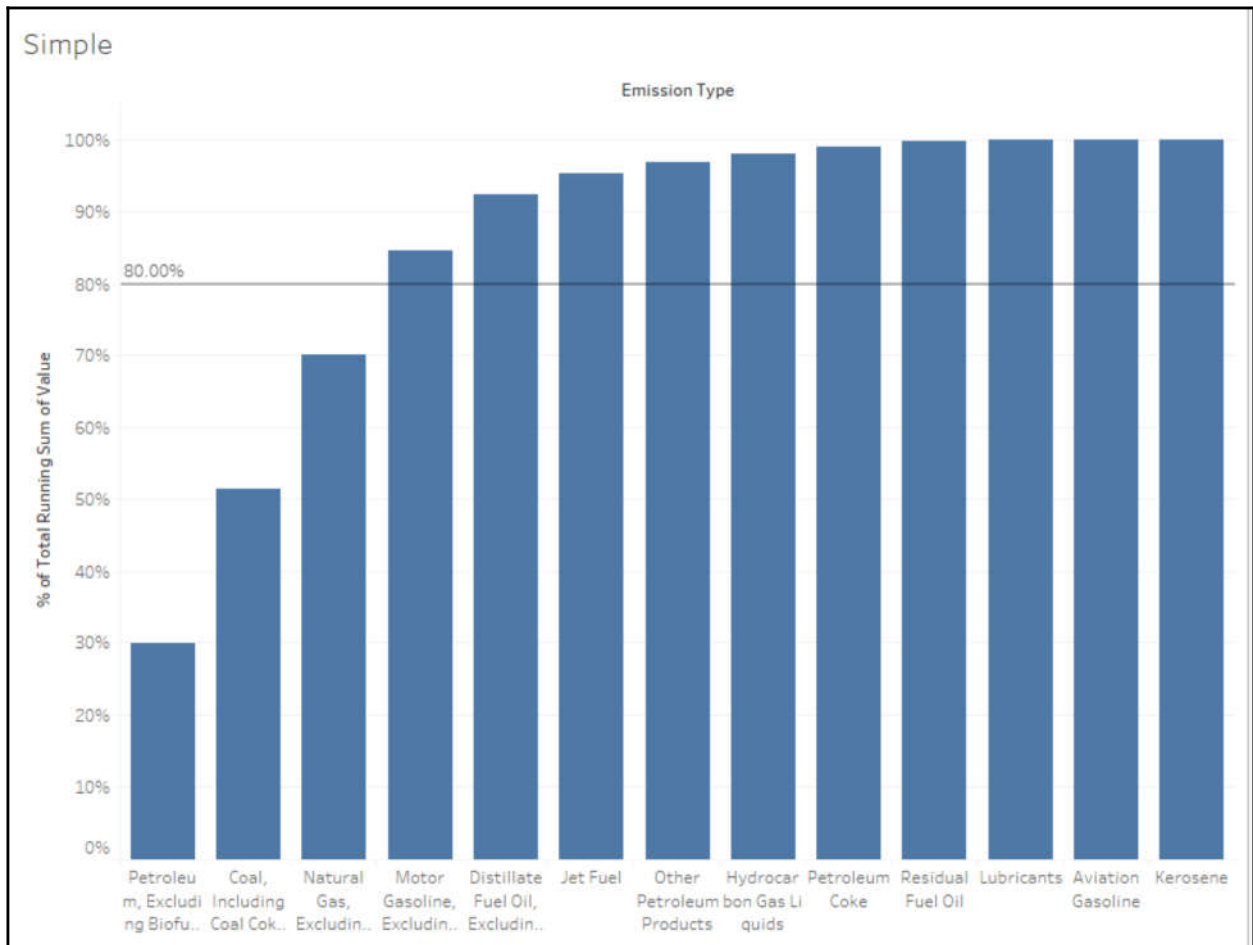
Automatic ▼

Rows SUM(Value)

Intermediate

Add a Reference Line

Table



Marks

Automatic

Color Size Label

Detail Tooltip

Emission Type

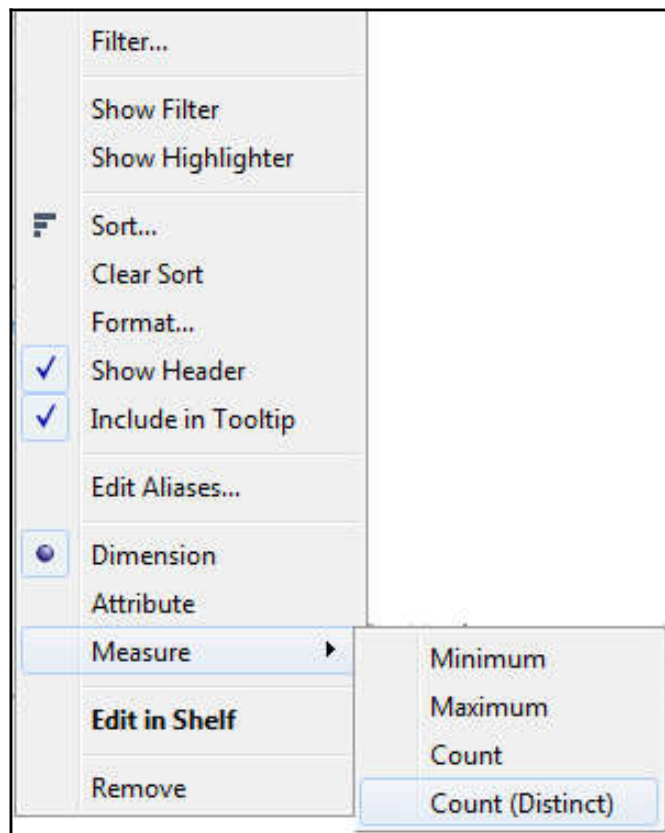


Table Calculation




% of Total Running Sum of Distinct count of Emission Type

Primary Calculation Type


- Running Total 
- Sum 


Secondary Calculation Type

- Percent of Total 
- Compute total across all pages

Compute Using

- Table (across)
- Cell
- Specific Dimensions**
- Emission Type

Restarting every 

Sort order **Specific Dimensions** 

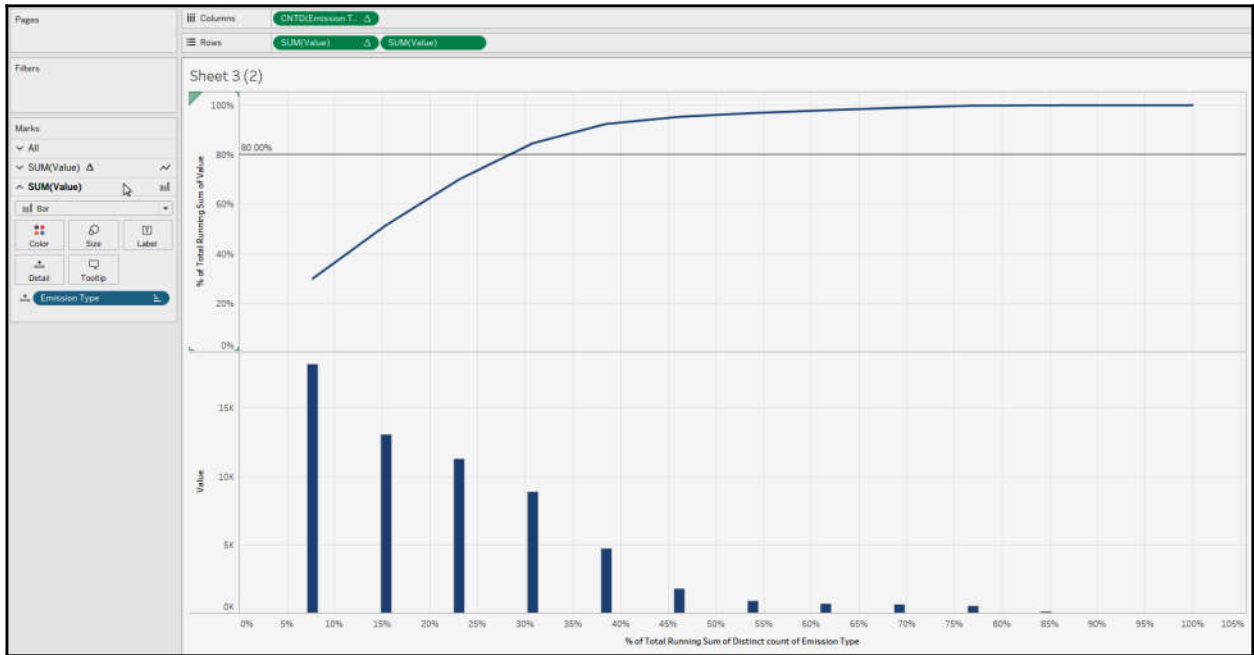
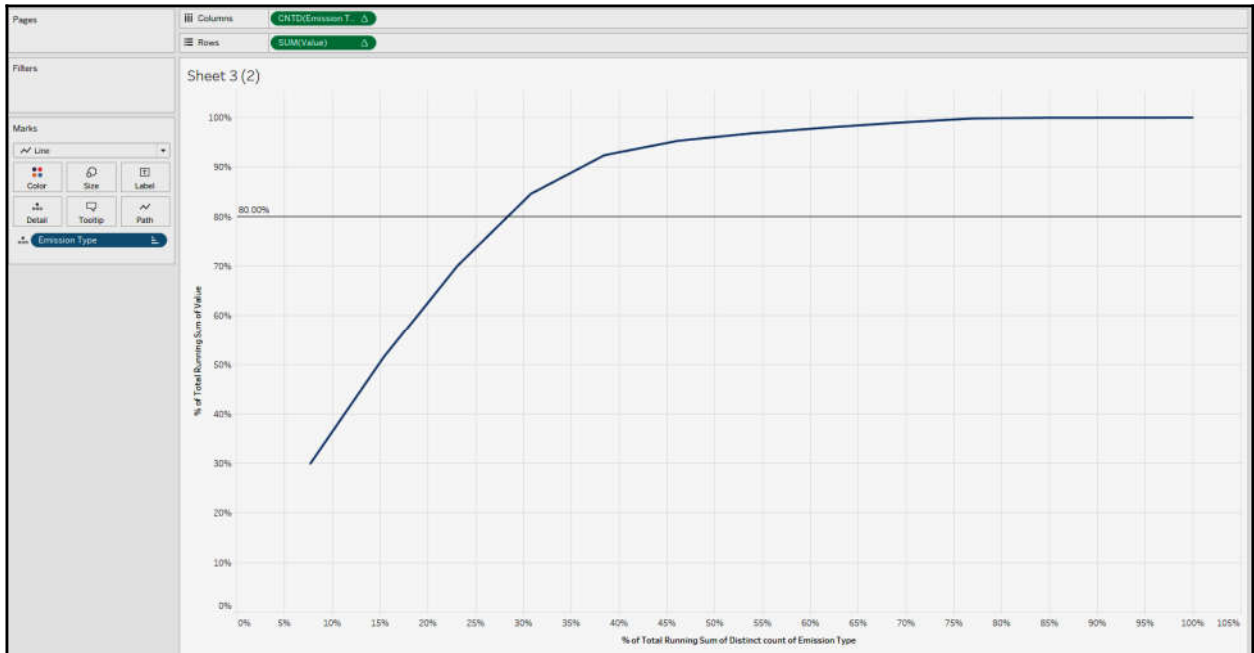
Compute Using

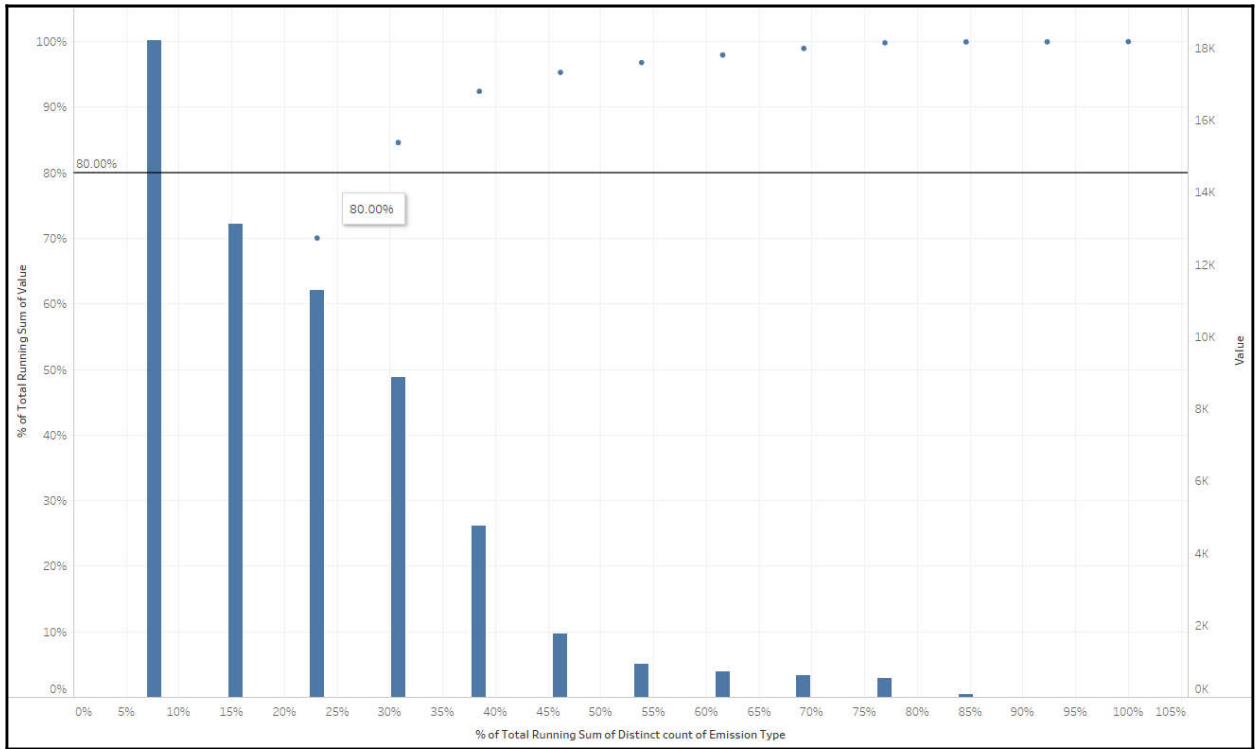
- Table (across)
- Table (down)
- Table
- Cell
- Specific Dimensions**
- Emission Type

At the level 

Sort order **Specific Dimensions** 

- Add secondary calculation
- Show calculation assistance





Marks

∨ All

∧ SUM(Value) Δ

∧ Line

Color Size Label

Detail Tooltip Path

Measure Names

Emission Type

∨ SUM(Value)

Edit Axis...

Clear Axis Range

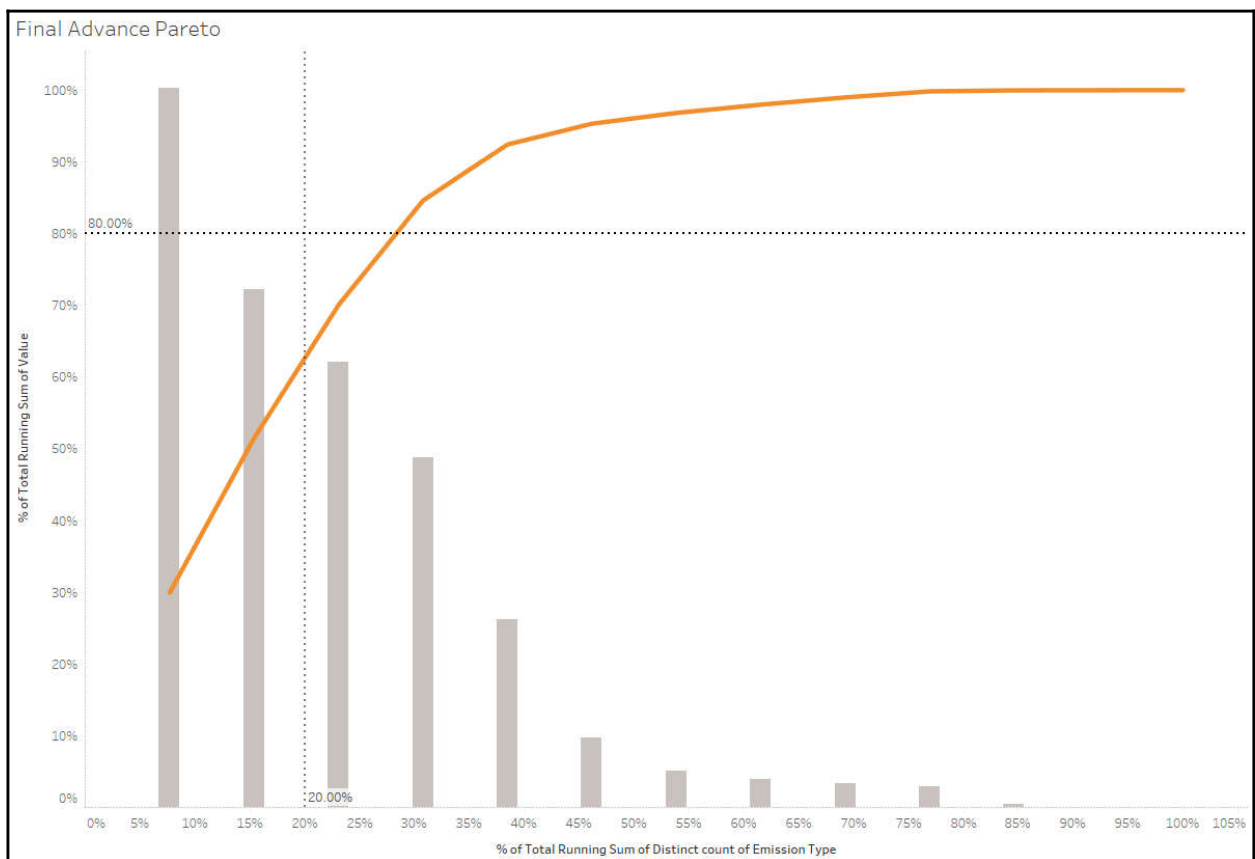
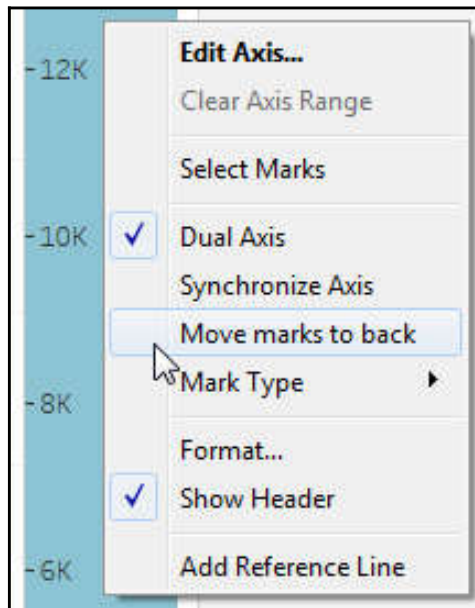
Select Marks

Format...

Show Header

Add Reference Line 50%

% of Total Running Sum of



Marks

Automatic

Color Size Label

Detail Tooltip Path

Country Full

Columns	YEAR(Rank Date)
Rows	SUM(Rank)

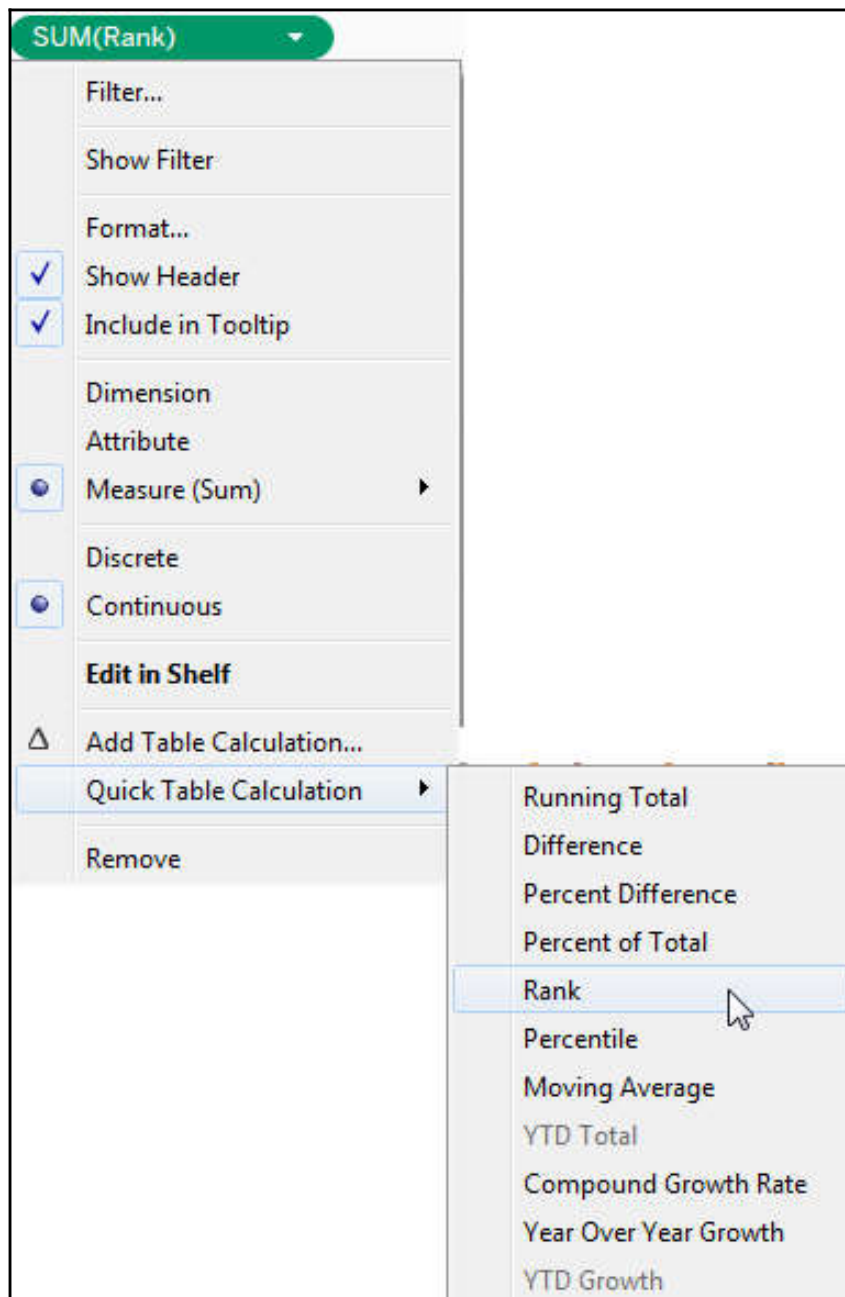


Table Calculation ✕
Rank of Rank

Calculation Type

Rank ▼

Ascending ▼

Competition (1, 2, 2, 4) ▼

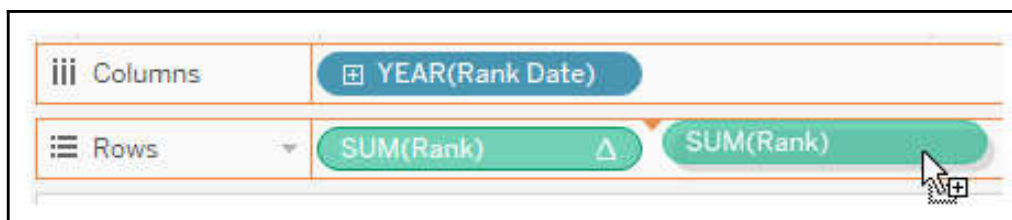
Compute Using

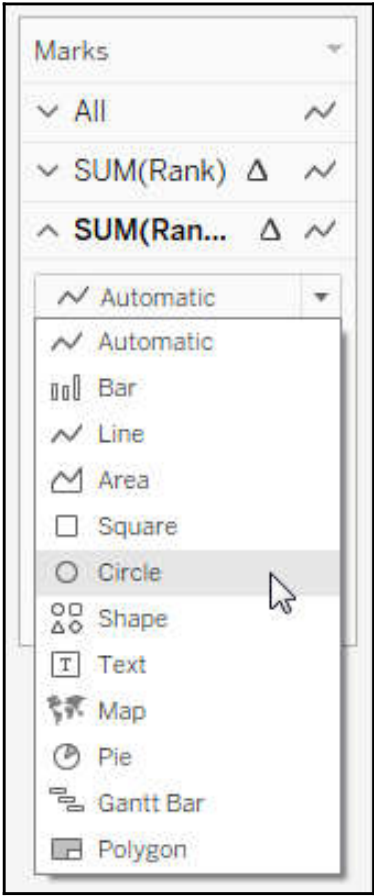
Table (across)
Cell
Specific Dimensions

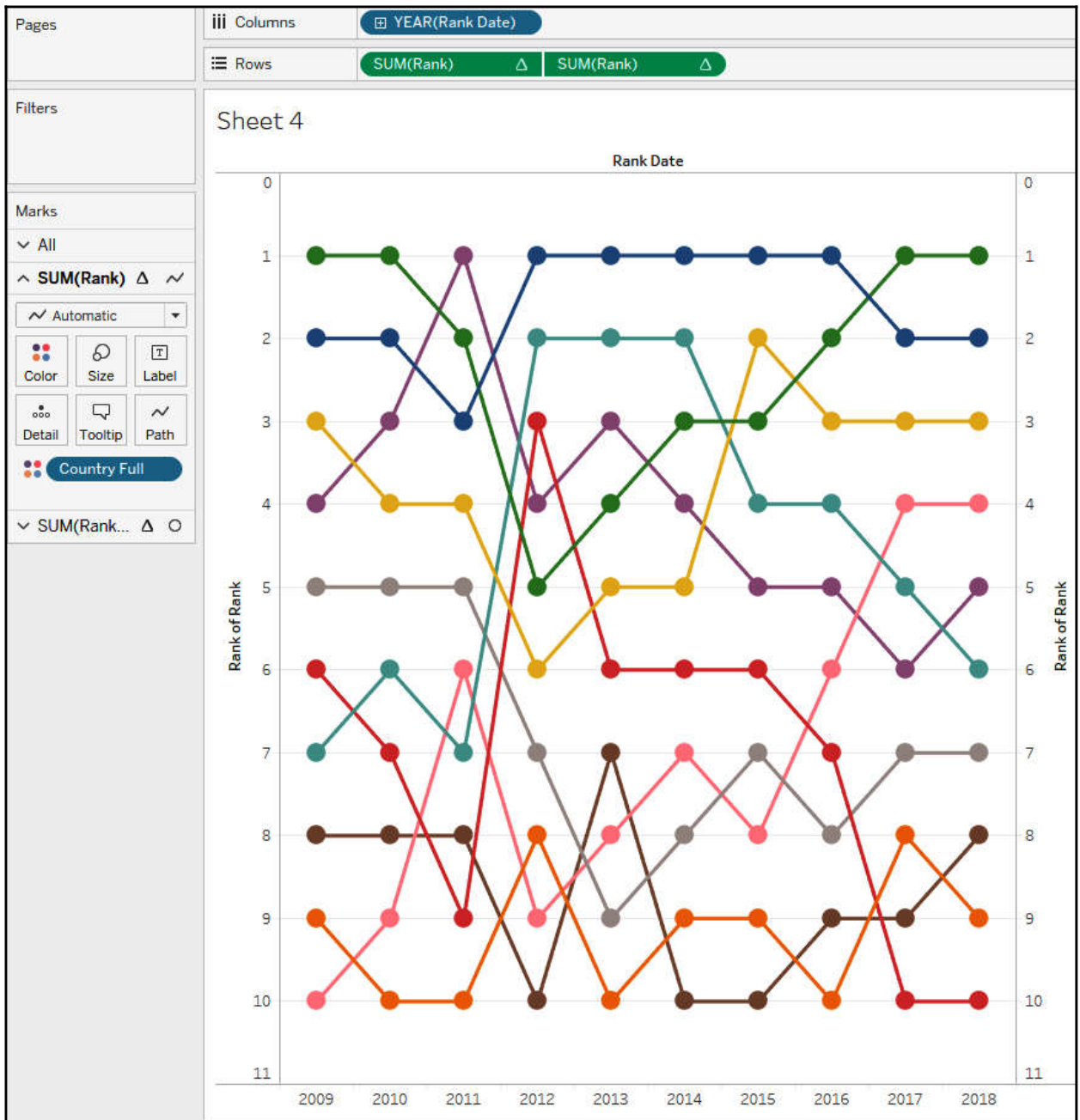
Country Full
 Year of Rank Date

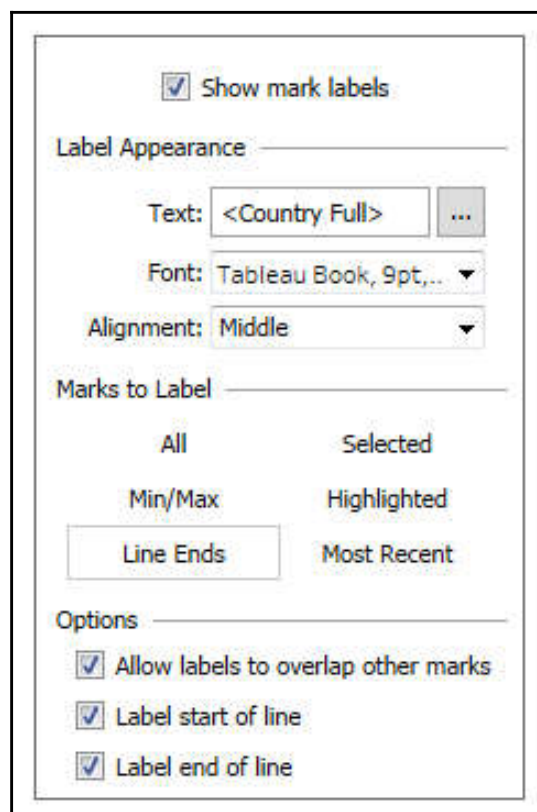
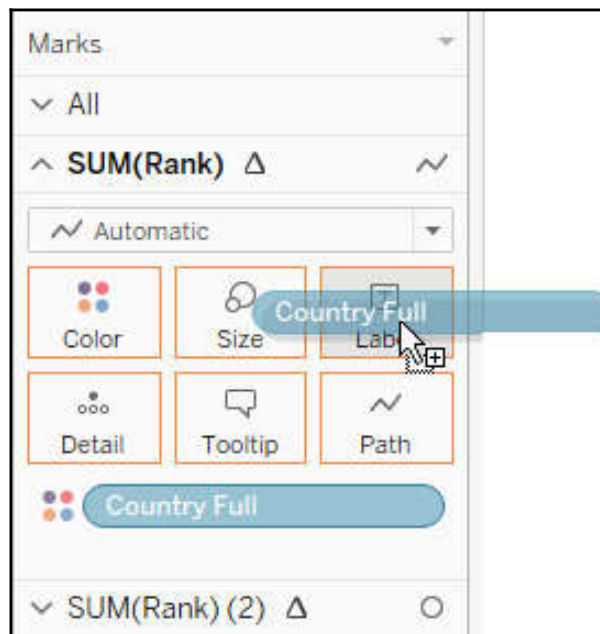
Show calculation assistance

General	Tick Marks
Range	
<input checked="" type="radio"/> Automatic <input type="radio"/> Uniform axis range for all rows or columns <input type="radio"/> Independent axis ranges for each row or column <input type="radio"/> Fixed	<input checked="" type="checkbox"/> Include zero
Automatic ▼	Automatic ▼
0	11
Scale	
<input checked="" type="checkbox"/> Reversed	
<input type="checkbox"/> Logarithmic	
Axis Titles	
Title	
Rank of Rank	
Subtitle	
	<input checked="" type="checkbox"/> Automatic
Reset	









Show mark labels

Label Appearance

Text: <Country Full> ...

Font: Tableau Book, 9pt, ...

Alignment: Tableau Book

Marks to Label: 9 B I U

All: Automatic

Min/Max: Match Mark Color

Line End: [Color swatches]

Options

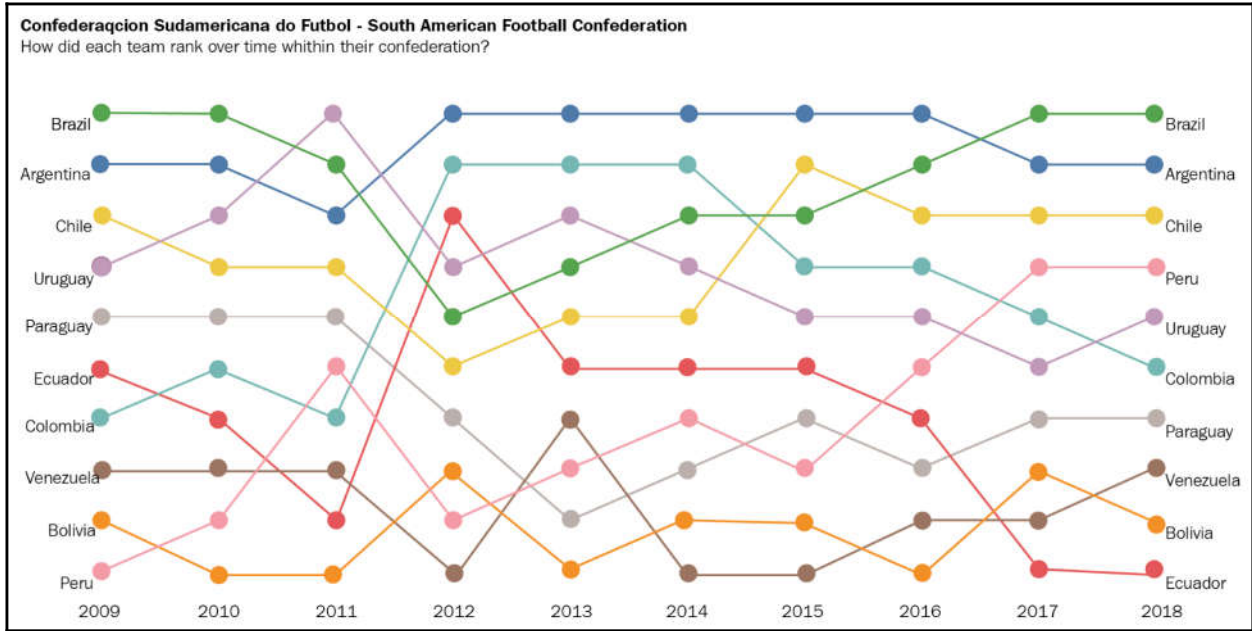
Allow labels

Label size

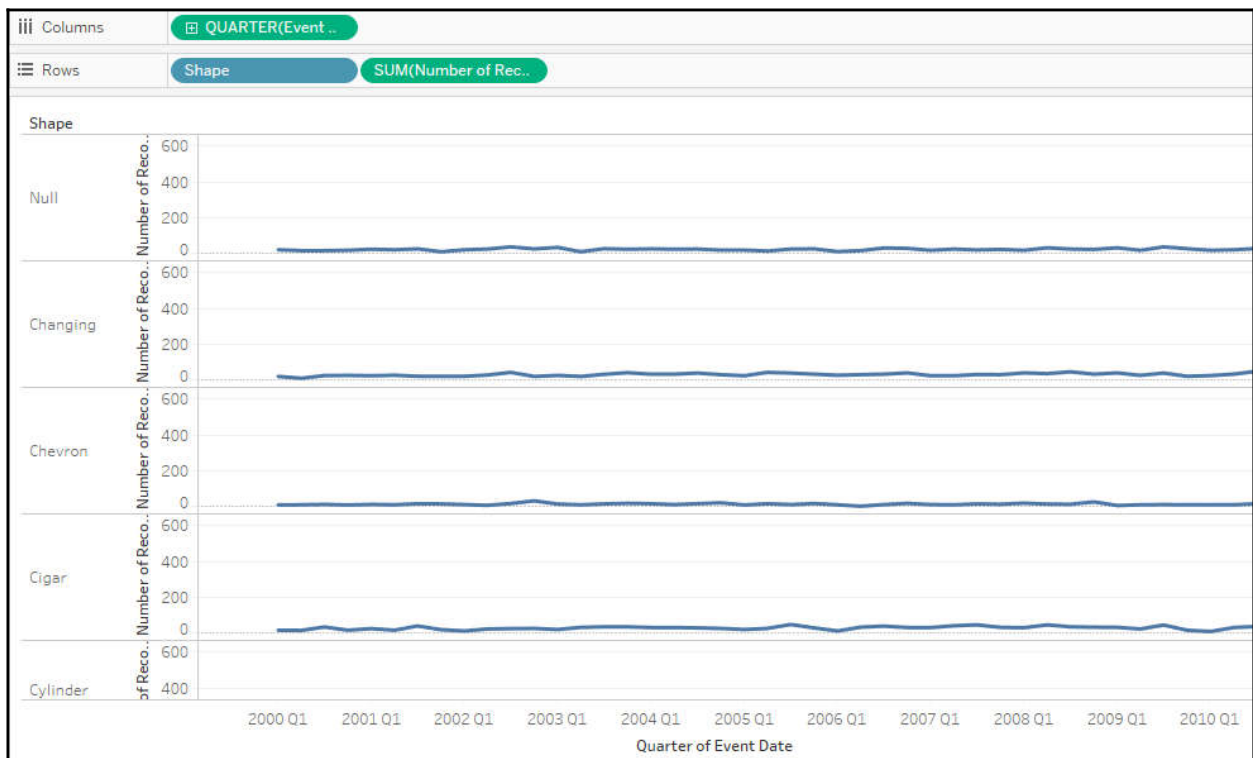
Label end

More colors...

100%



Columns	QUARTER(Event ..
Rows	Shape

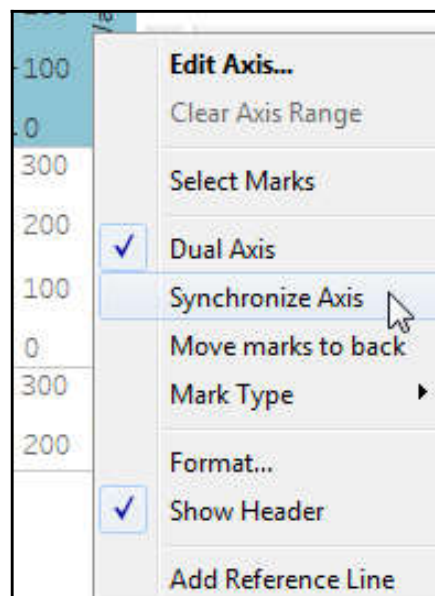
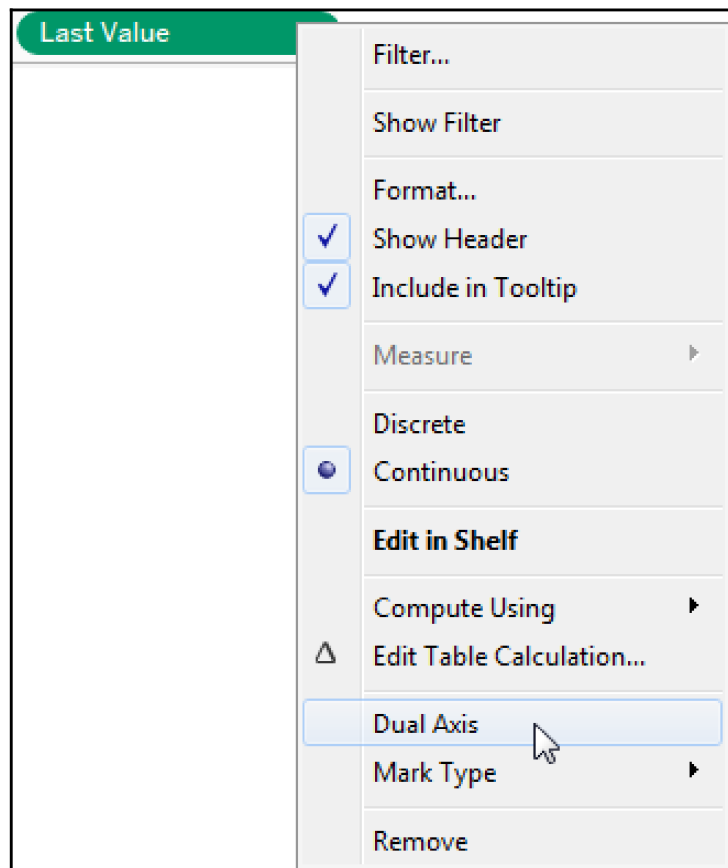


Last Value

Results are computed along Table (across).

```
IIF(LAST()=0, SUM([Number of Records]), NULL)
```





General

Tick Marks

Range

- Automatic Include zero
- Uniform axis range for all rows or columns
- Independent axis ranges for each row or column
- Fixed

Independent ▼	Independent ▼
-4	658

Scale

- Reversed
- Logarithmic

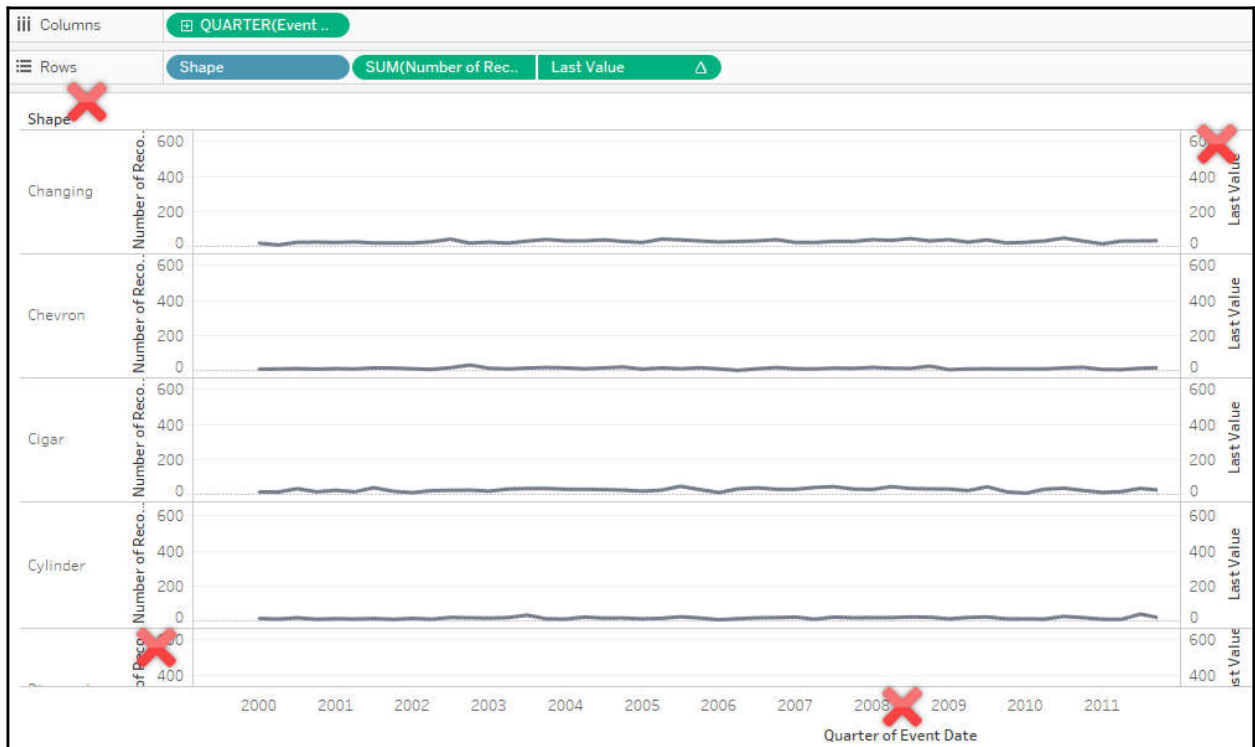
Axis Titles

Title





Number of Records

Subtitle Automatic

Reset



Format Borders ×

A     Fields ▾

Sheet **Rows** Columns

Default

Cell: ▾

Pane: ▾

Header: ▾

Total

Pane: ▾

Header: ▾

Grand Total

Pane: ▾

Header: ▾

Row Divider

Pane: ▾

Header: ▾

Level:






Column Divider

Pane: ▾

Header: ▾

Level:

Format Lines ✕

A      Fields ▼

Sheet Rows Columns

Lines

Grid Lines: ▼

Zero Lines: ▼

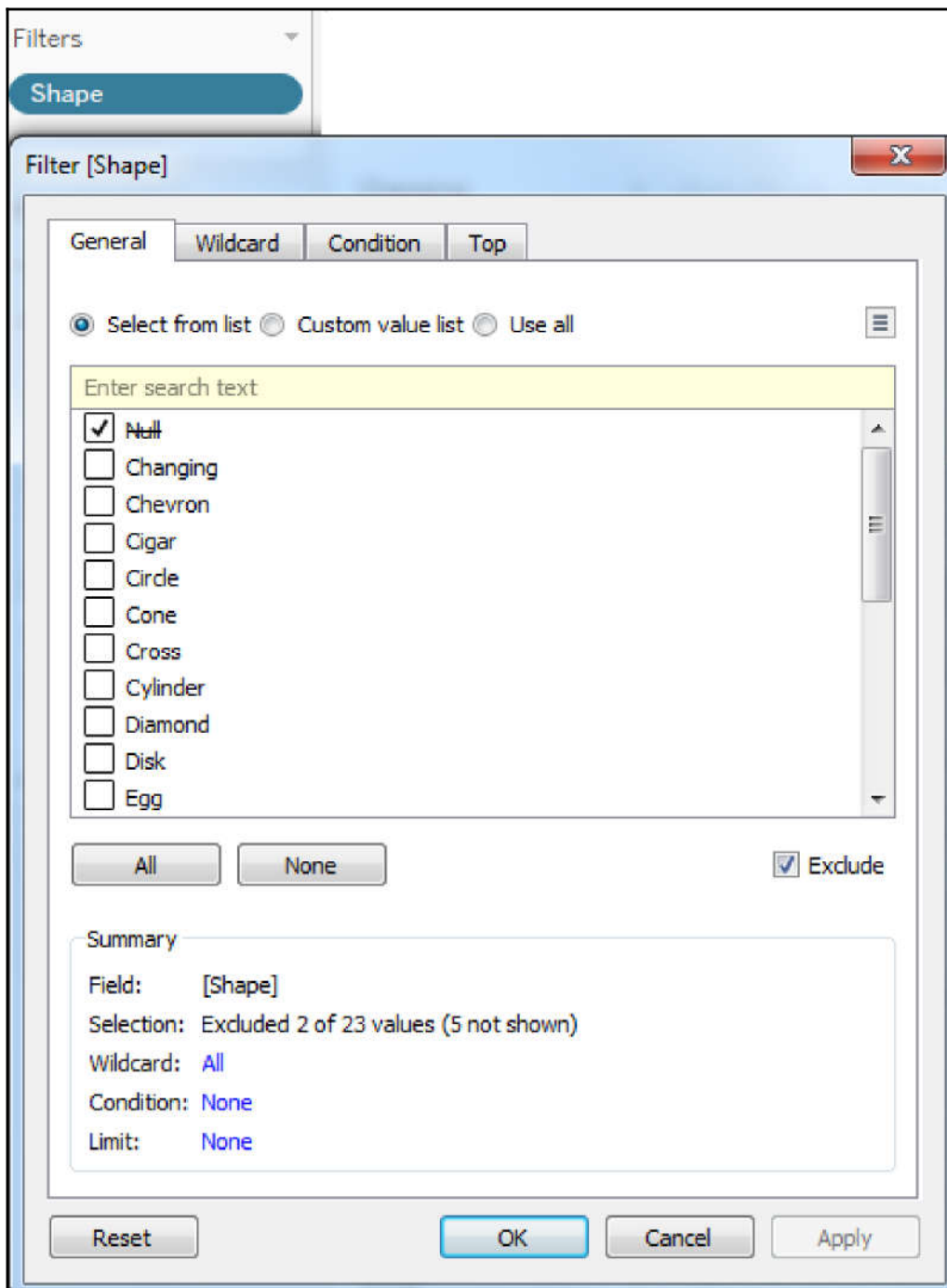
Trend Lines: ▼

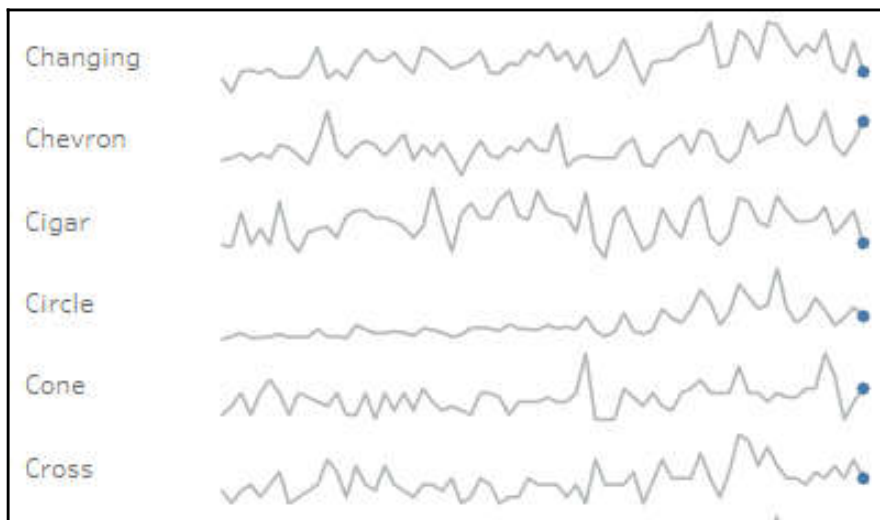
Ref Lines: ▼

Drop Lines: ▼

Axis Rulers: ▼

Axis Ticks: ▼





Pos or Neg Change

Results are computed along Pane (across then down).

`ZN(SUM([Number of Records])) - LOOKUP(ZN(SUM([Number of Records])), -1) < 0`

Marks

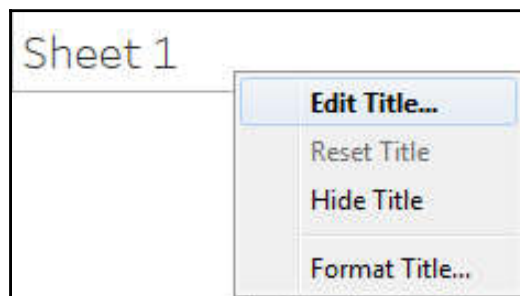
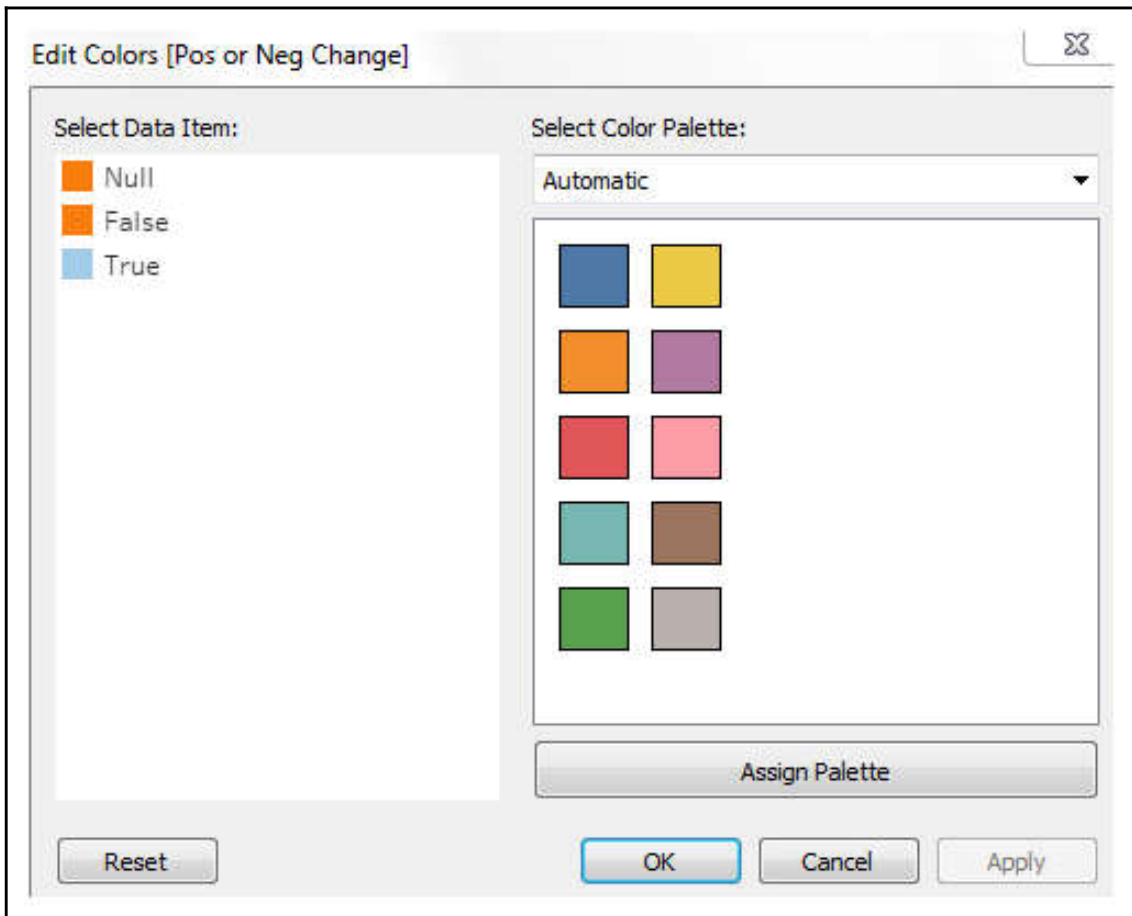
- ∨ All
- ∨ SUM(Number of Records) ✓
- ∧ Last Value Δ ○

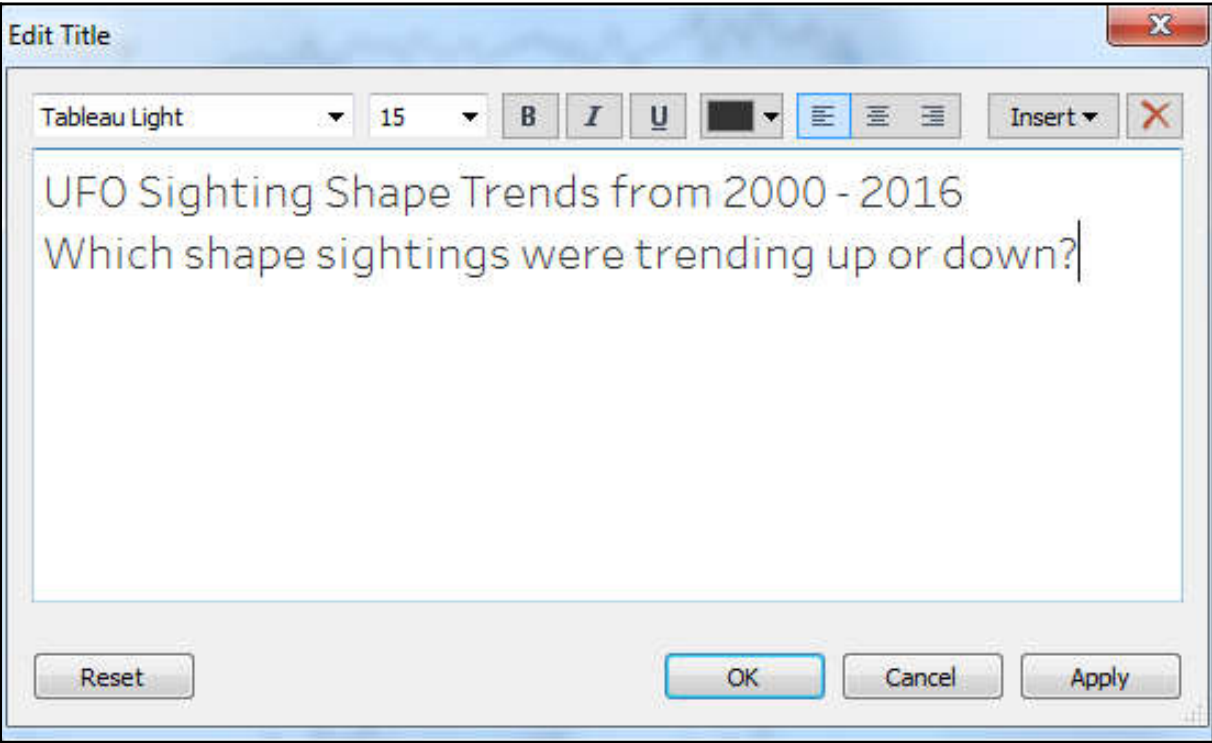
○ Circle ▾

Pos or Neg Change

Color Size Label

Detail Tooltip





UFO Sighting Shape Trends from 2000 - 2016

Which shape sightings were trending **up** or **down**?



Max Sightings

Results are computed along Table (across).

```
IF sum([Number of Records]) = WINDOW_MAX(sum([Number of Records]))  
then sum([Number of Records]) END
```

Columns: QUARTER(Event ..)

Rows: Shape

Marks: SUM(Number of Rec..) Max Sightings

Marks

- ▼ All
- ▼ SUM(Number of Records) ✓
- ▲ **Max Sightings** △ ○

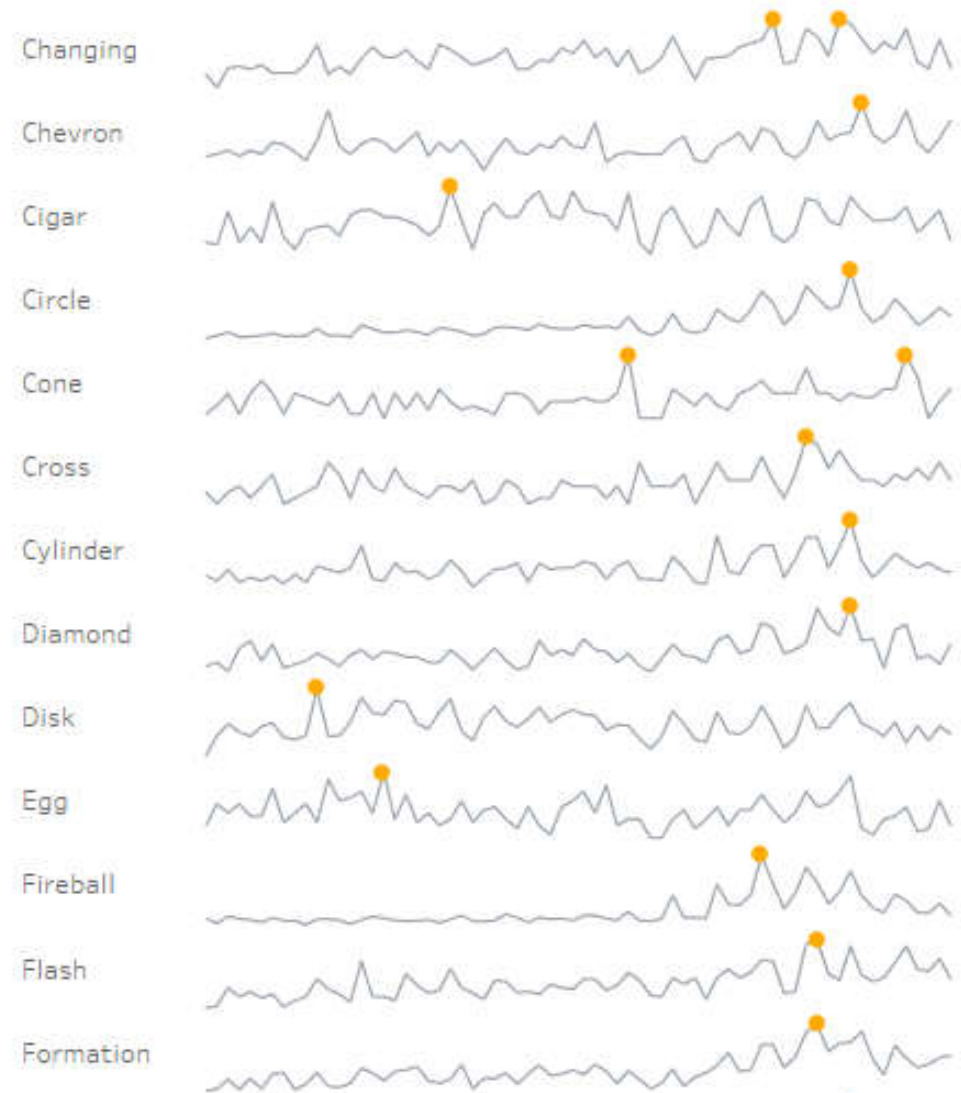
○ Circle

Color Size Label

Detail Tooltip

UFO Sighting Shape Trends from 2000 - 2016


When were the **maximum sightings** per shape type?











Donut
0

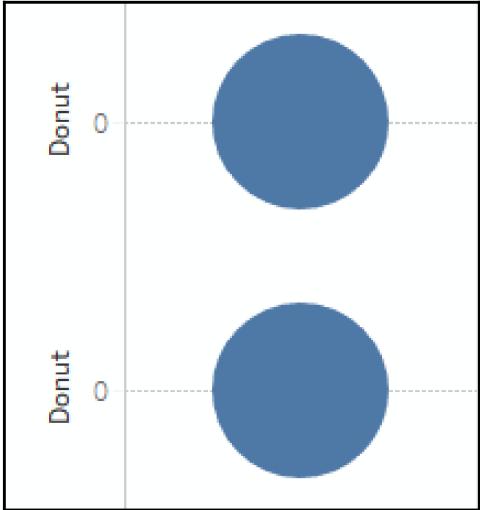
☰ Rows	SUM(Donut)	SUM(Donut)
--------	------------	------------

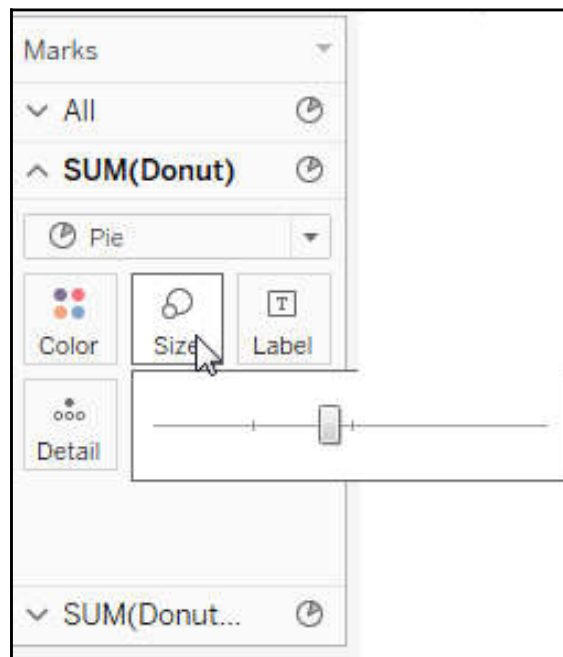
Marks

^ All 

 Pie 

 Color	 Size	 Label
 Detail	 Tooltip	 Angle





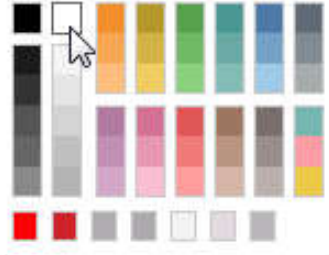
Marks

- ▼ All
- ▼ SUM(Donut)
- ^ **SUM(Donut...**

Pie

Color Size Label

Color



More colors...

Opacity

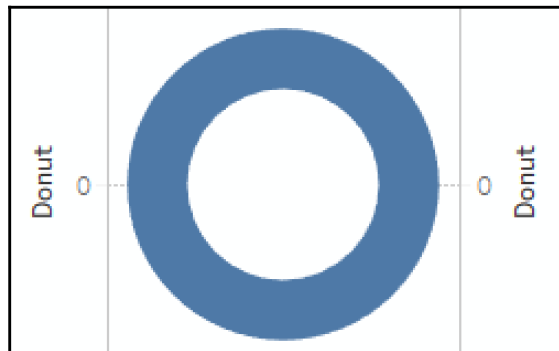
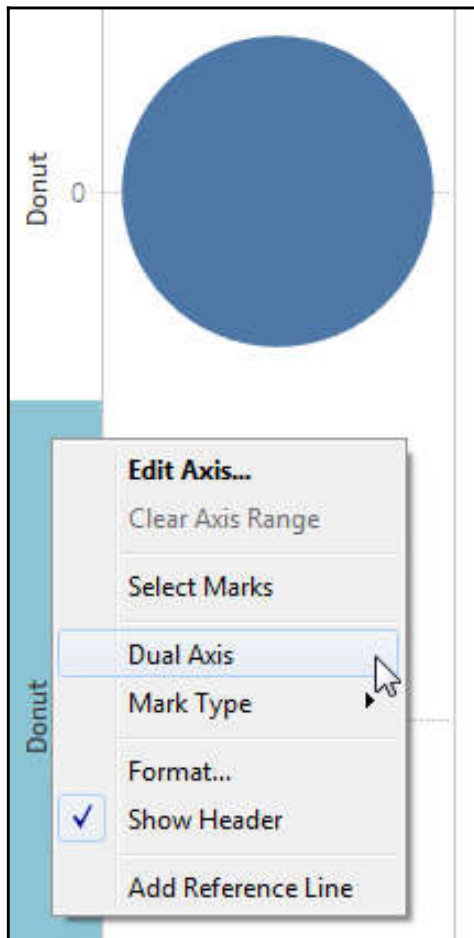
100%

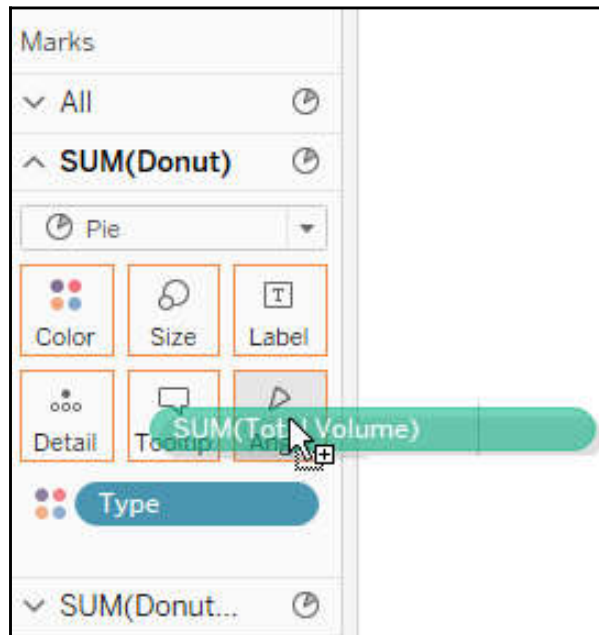
Effects

Border: Automatic

Halo:


Detailed description: This image shows a software interface for configuring a visualization. At the top, a 'Marks' section contains a list of items: 'All', 'SUM(Donut)', and 'SUM(Donut...)' (which is selected and bolded). Below this is a dropdown menu set to 'Pie'. Three buttons labeled 'Color', 'Size', and 'Label' are visible. The 'Color' button is active, opening a color palette. The palette features a grid of color swatches, with a mouse cursor hovering over a light gray swatch in the second row, first column. Below the grid is a 'More colors...' link. Underneath the palette is an 'Opacity' section with a slider set to 100%. At the bottom, an 'Effects' section includes a 'Border' dropdown set to 'Automatic' and an empty 'Halo' dropdown.










Columns	Region
Rows	SUM(Donut) SUM(Donut)

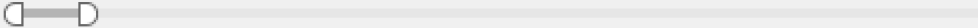
Filters

SUM(% of Organic to Total) 

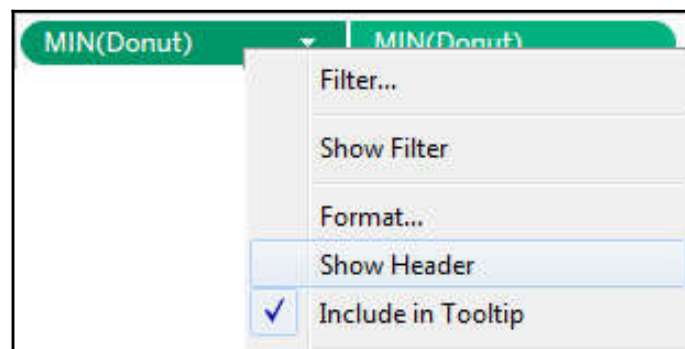
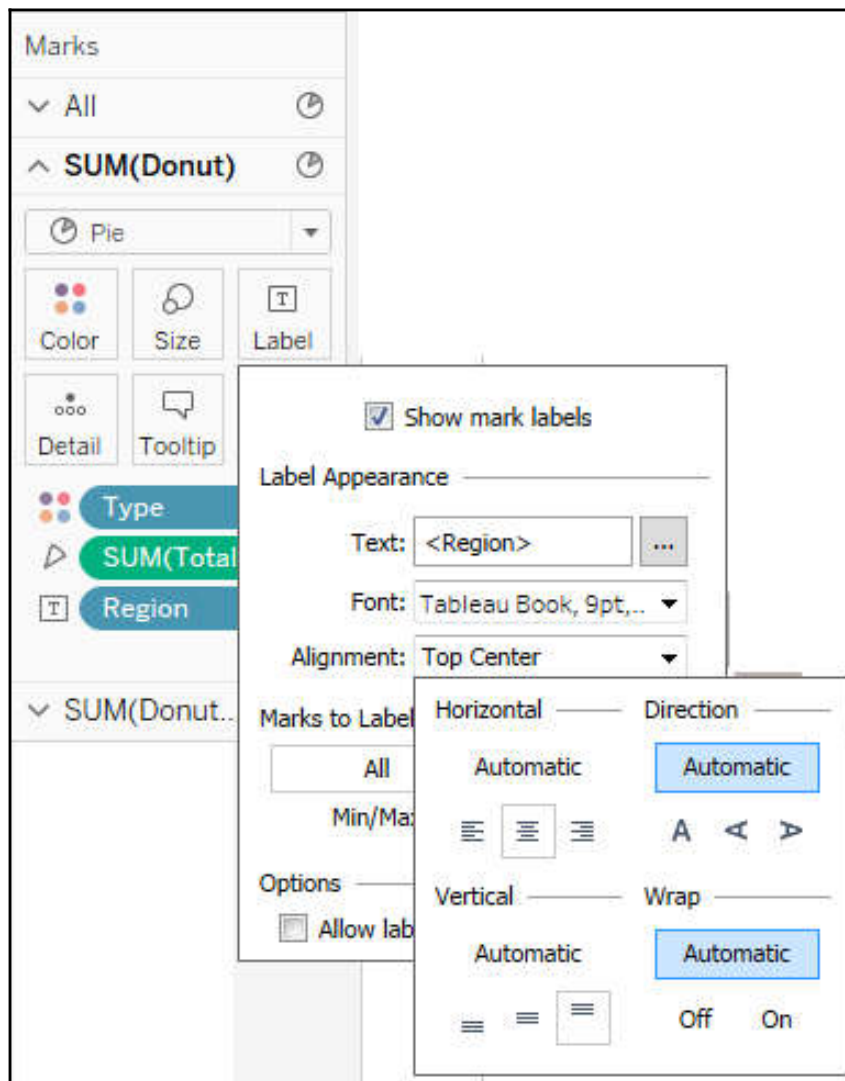
Filter [Rank of % of Organic to Total] 

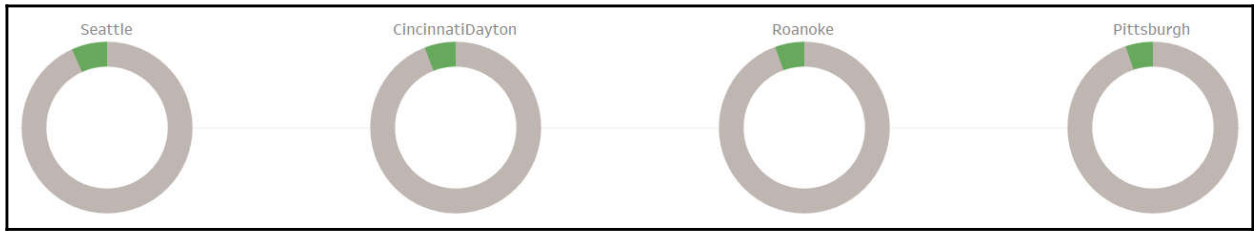
 Range of values  At least  At most  Special

Range of values


1 53

Include Null Values





% of Organic to Total

```
{FIXED [Region] : sum(If [Type] = 'organic' then [Total Volume] else 0 end)/sum([Total Volume])}
```

Marks

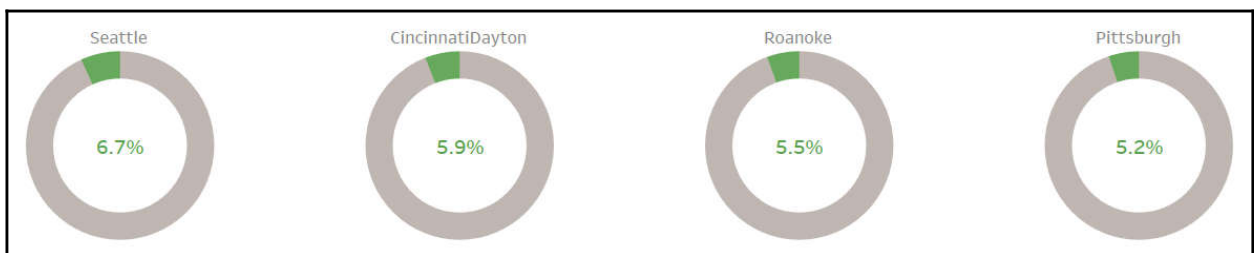
- ▼ All
- ▼ MIN(Donut)
- ^ **MIN(Donut) (2)**

Pie

Color Size Label

Detail Tooltip Angle

SUM(% of Organic to Total)



Pages

YEAR(Date)

Columns	DAY(Date)	
Rows	SUM(24 hr New Sno..)	SUM(Base Depth - S..)

Marks

▼ All

^ SUM(24 hr New Sno...

Shape

Color	Size	Label
Detail	Tooltip	Shape

▼ SUM(Base Depth - S...

More Shapes...

Marks

- ∨ All
- ∨ SUM(24 hr New Snow ...
- ∧ **SUM(Base Depth - S...**

Area

Color Size Label

Detail Tooltip

Standard

- Standard
- Fit Width
- Fit Height
- Entire View

Format Shading [X]

A [Font] [Grid] [List] Fields ▾

Sheet [Rows] [Columns] Filters

Default

Worksheet: [Dropdown]

Pane: None

Header: [Color swatches]

Total

Pane: [Color swatches]

Header: [Color swatches]

Grand Total

[More colors...]

YEAR(Date)

< 2017 >

◀ ▶

☑ Show history ▼

Marks to show history for

Selected Highlighted

Manual **All**

Length

All Last: 5

Show

Marks Trails Both

Marks

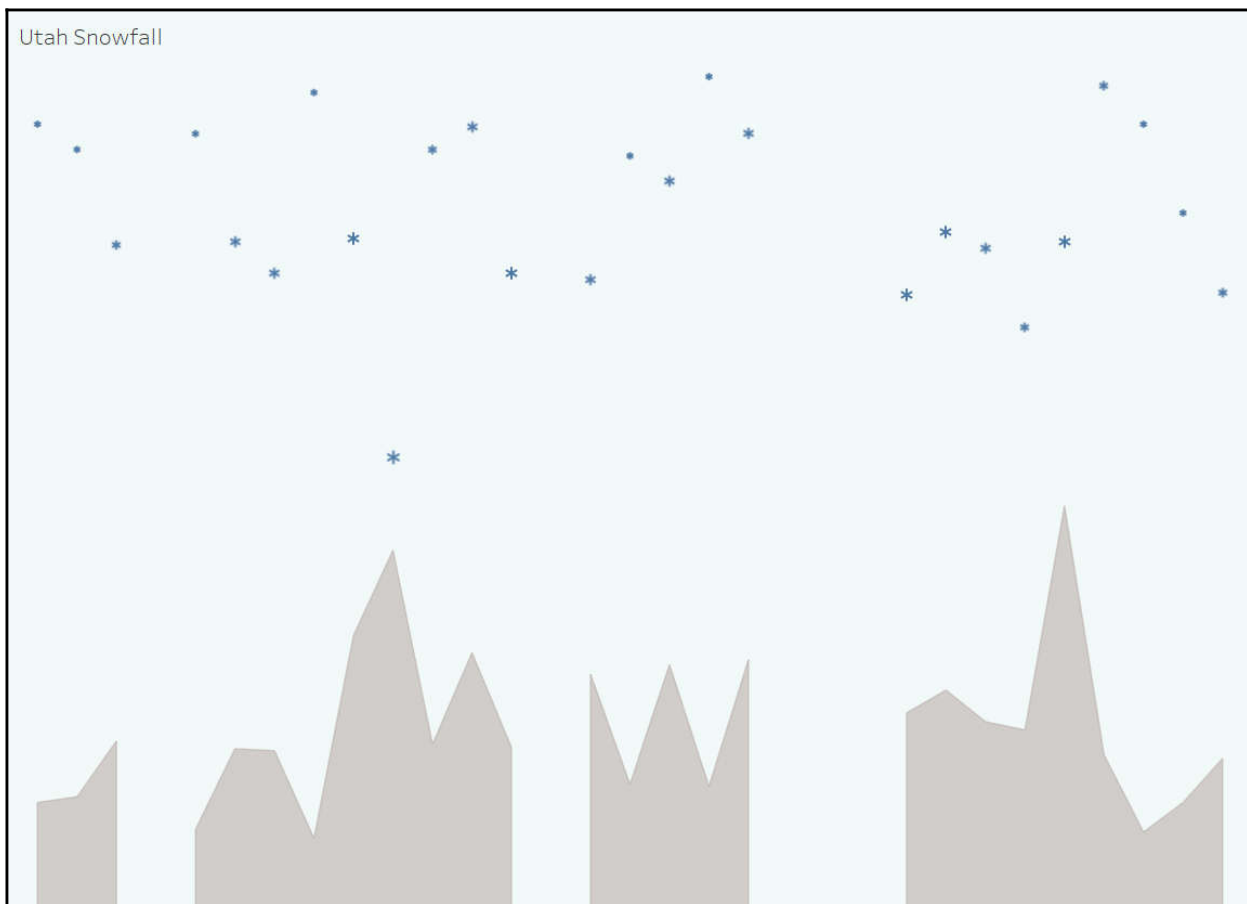
Format: [Color Picker]

Fade: [Slider]

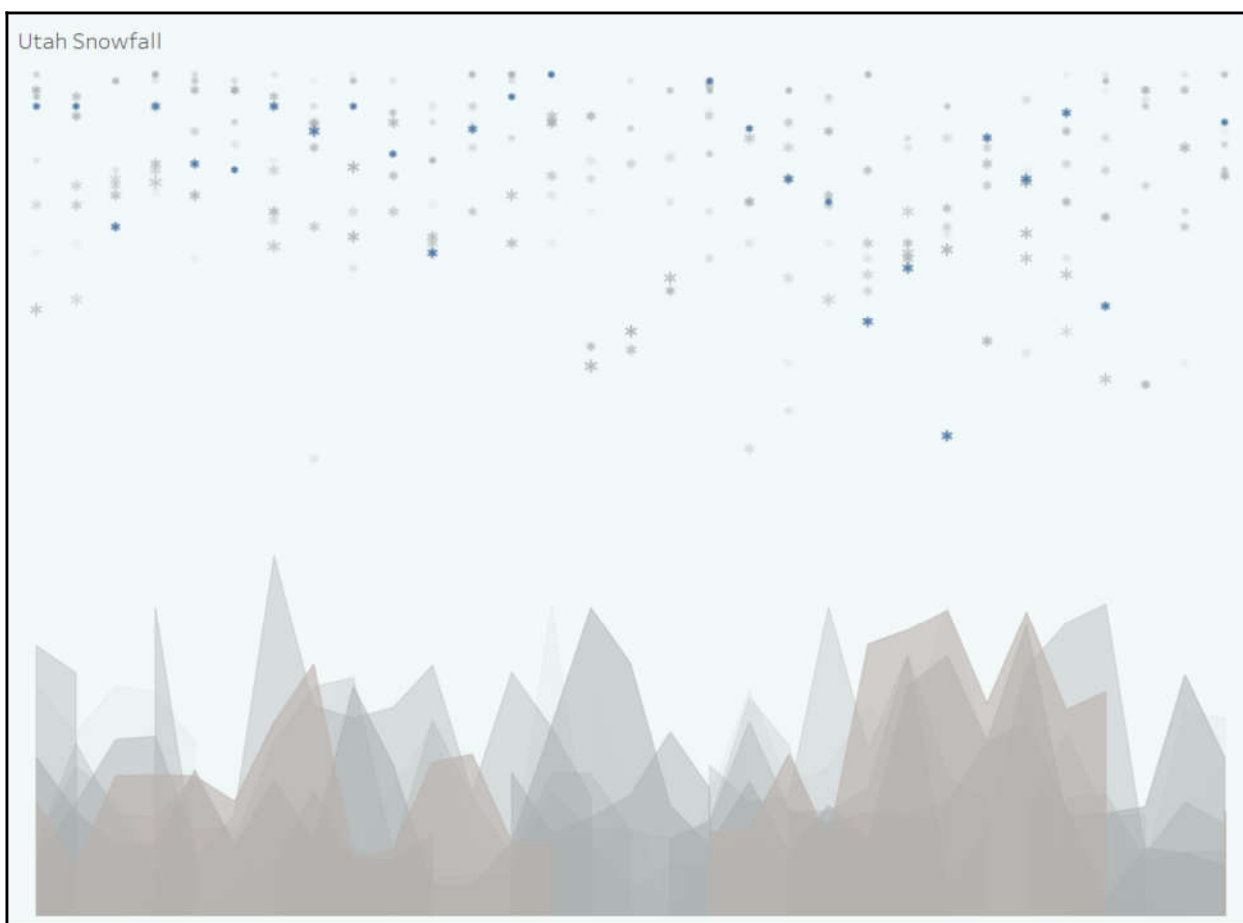
Trails

Format: None

Utah Snowfall



Utah Snowfall



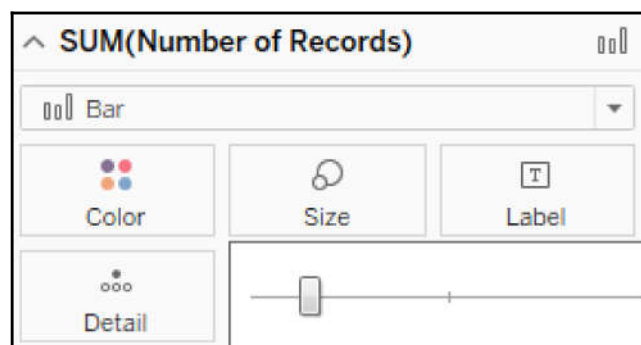
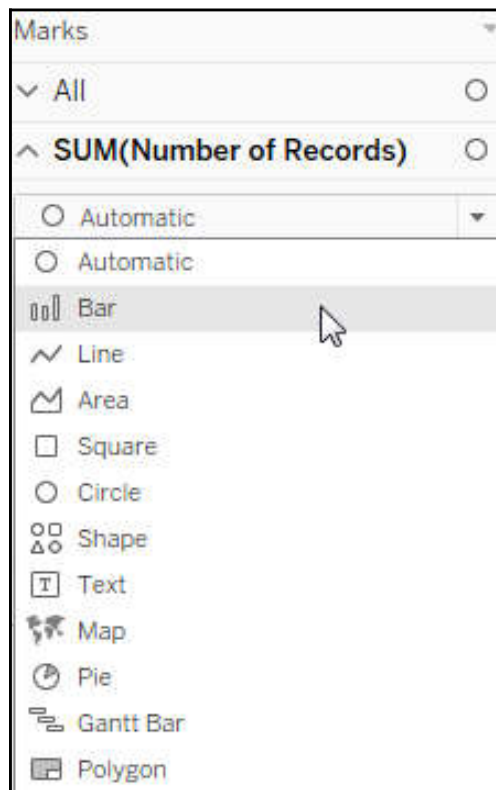
Chapter 9: Tableau Advanced Visualization

Columns	Subject Matter
Rows	SUM(Number of Rec..)

Columns	Subject Matter	
Rows	SUM(Number of Rec..)	SUM(Number of Rec..)


SUM(Number of R.. ▾)


- Filter...
- Show Filter
- Format...
- Show Header
- Include in Tooltip
- Dimension
- Attribute
- Measure (Sum) ▶
- Discrete
- Continuous
- Edit in Shelf**
- △ Add Table Calculation...
- Quick Table Calculation ▶
- Dual Axis
- Mark Type ▶
- Remove





^ SUM(Number of Records) (2) ○


Automatic ▾

 Color

 Size

 Label

 Detail



Subject Matter ☰

Sort [Subject Matter] ✕

Sort By
Field ▾

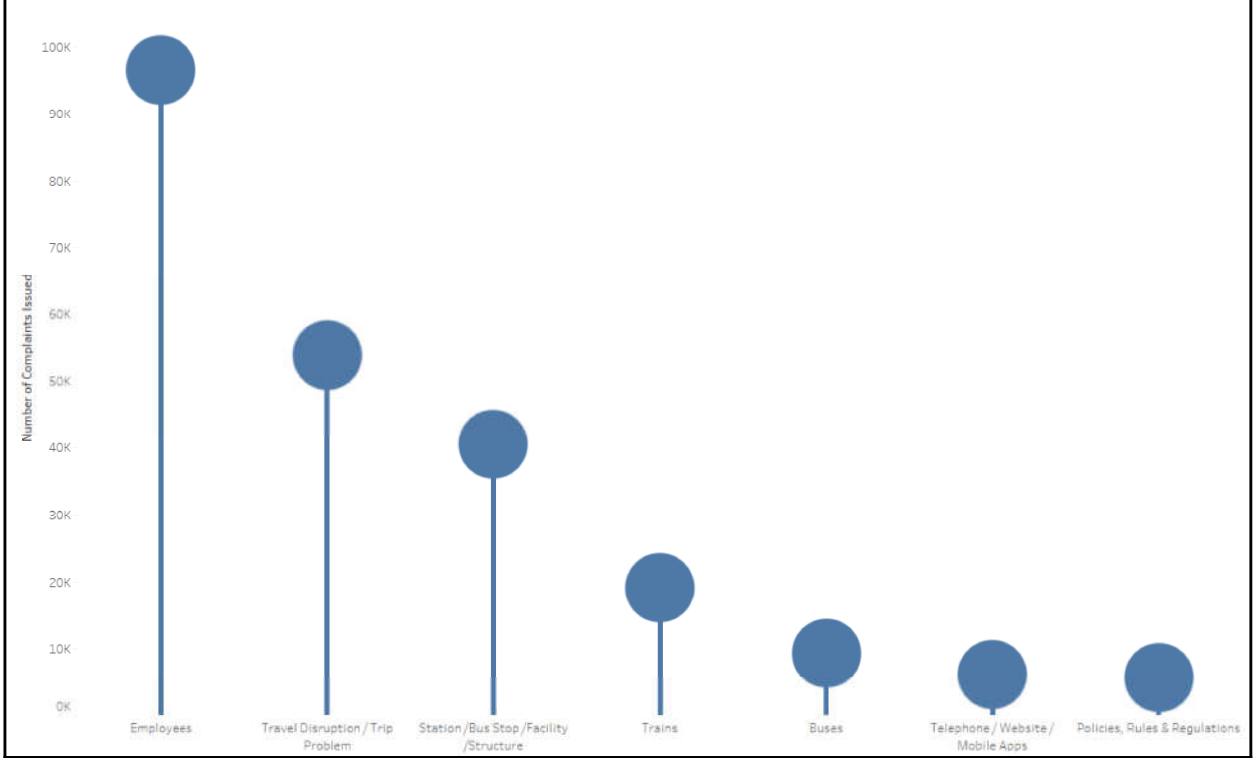
Sort Order
 Ascending
 Descending

Field Name
Number of Records ▾

Aggregation
Sum ▾

Clear

NYC, Mass Transit Customer Complaint Subject Areas



Marks

▼ All

▼ SUM(Number of Records)

^ **SUM(Number of Records) (2)**

○ Circle

Color	Size	Label
Detail	Tooltip	

SUM(Number of Records)

Table Calculation ✕
% of Total Number of Records

Calculation Type

Percent of Total ▼

Compute total across all pages

Compute Using

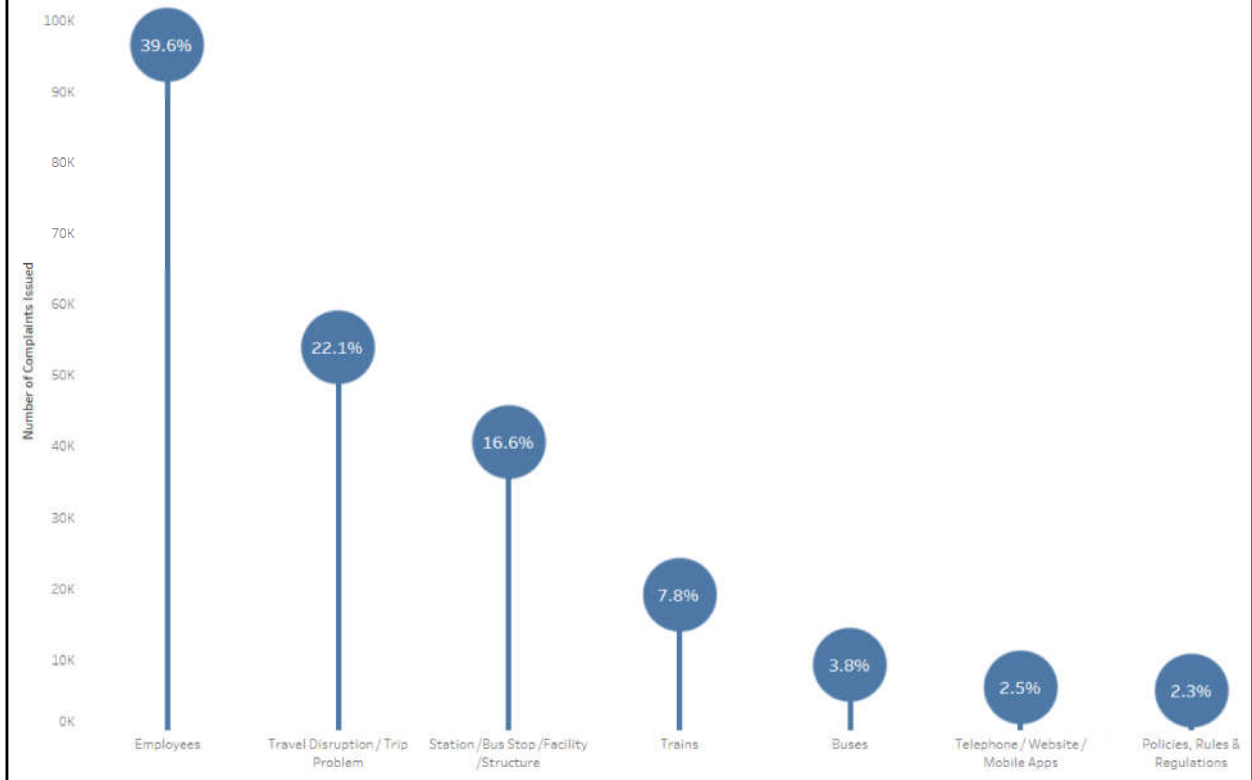
- Table (across)
- Table (down)
- Table
- Cell
- Specific Dimensions**

Subject Matter

At the level _____ ▼

Show calculation assistance

NYC, Mass Transit Customer Complaint Subject Areas



Name:

Properties

Data type:

Current value:

Display format:

Allowable values: All List Range

List of values

Value	Display As
1	City
2	State
3	Style
4	Serving Size
5	Brewery Name
6	Beer Name
Add	

Name: Comment >>

Properties

Data type:

Current value:

Display format:

Allowable values: All List Range

List of values

Value	Display As
1	City
2	State
3	Style
4	Serving Size
5	Brewery Name
6	Beer Name
Add	

Dimension Left

```

CASE [Select Dimension Left]
WHEN 1 THEN [City]
WHEN 2 THEN [State]
WHEN 3 THEN [Style]
WHEN 4 THEN [Serving Size]
WHEN 5 THEN [Brewery Name]
WHEN 6 THEN [Beer Name]
END

```

Dimension Right

```
CASE [Select Dimension Right]
WHEN 1 THEN [City]
WHEN 2 THEN [State]
WHEN 3 THEN [Style]
WHEN 4 THEN [Serving Size]
WHEN 5 THEN [Brewery Name]
WHEN 6 THEN [Beer Name]
END
```

Chosen Measure

```
[F1]
```

Edit Parameter [Top Dimension Values]

Name: Comment >>

Properties

Data type:

Current value:

Display format:

Allowable values: All List Range

Range of values

Minimum: Set from Parameter ▾

Maximum: Set from Field ▾

Step size:

General Wildcard Condition Top

None

By field:

Top Top Dimension Values by

Chosen Measure Sum

By formula:

Top 10 by

Reset OK Cancel Apply

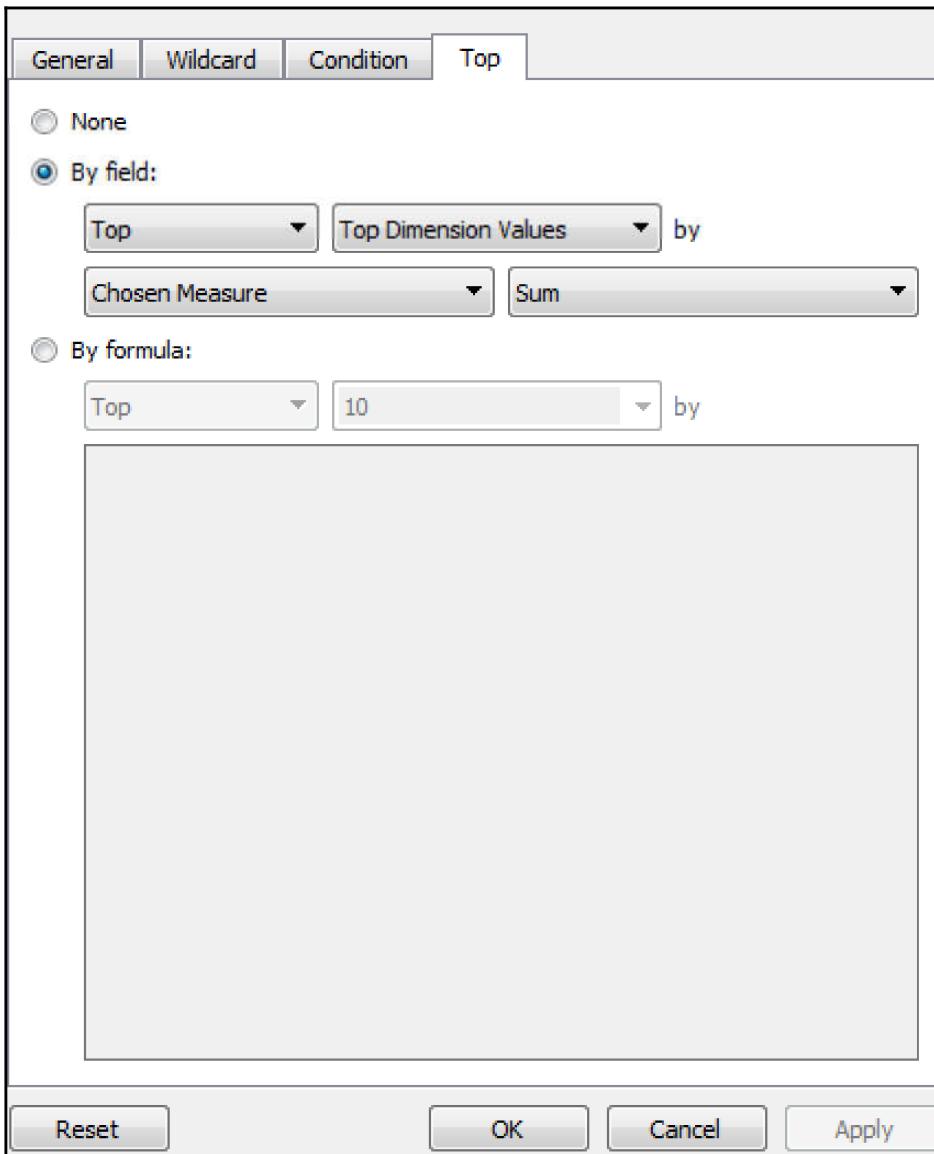


Table Calculation ✕
% of Total Chosen Measure

Calculation Type

Percent of Total ▼

Compute total across all pages

Compute Using

Table (across)
Table (down)
Table
Cell
Specific Dimensions

Dimension Left
 Dimension Right

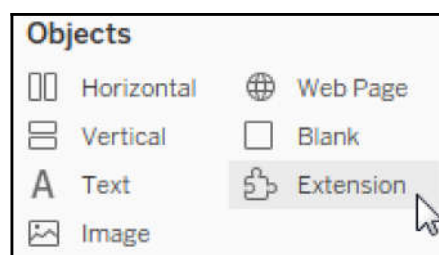
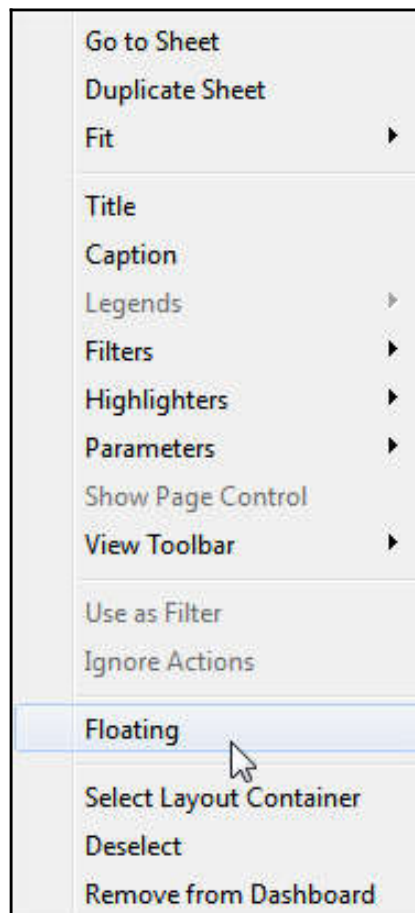
At the level ▼

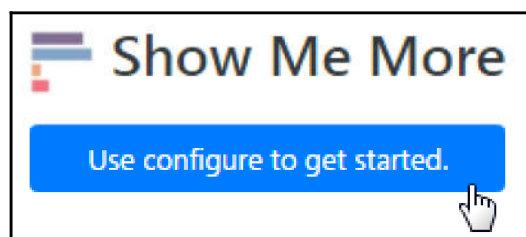
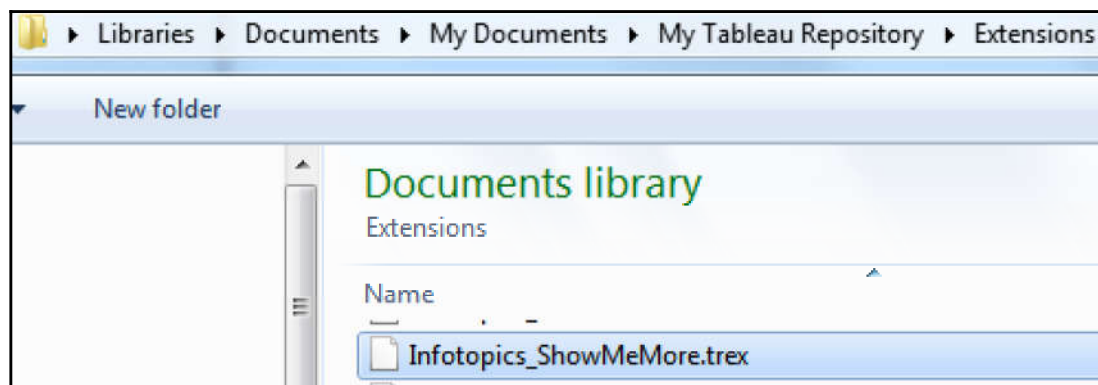
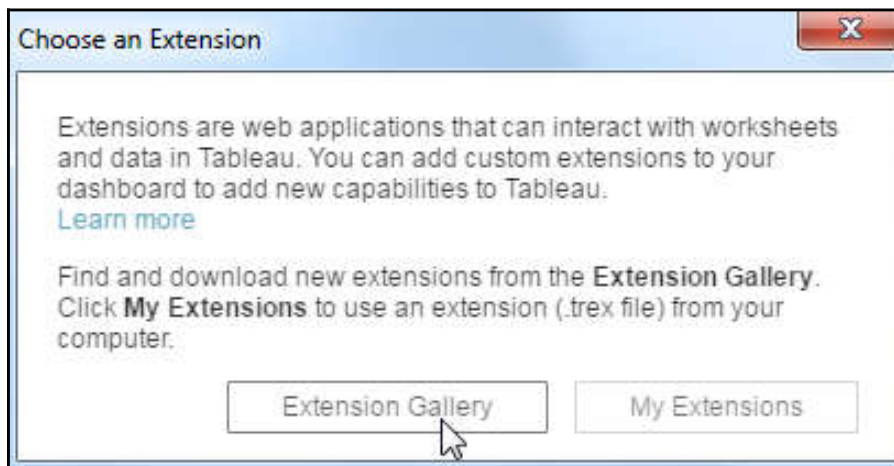
Sort order Specific Dimensions ▼

Show calculation assistance

Pages		Columns	Dimension Right									
Filters		Rows	Dimension Left									
Marks		Dimension Right										
Automatic		Dimension Left	America n Ambe..	America n Blond..	America n Brow..	America n Doubl..	America n IPA	America n Pale A..	America n Pale ..	America n Porter	Saison / Farmho..	Witbier
		CO	9.95%	27.07%	22.52%		22.77%	16.18%	24.56%	6.42%	10.01%	18.19%
		WA	15.54%	13.16%	15.22%		18.18%	10.68%	30.86%	33.19%	29.75%	16.55%
		CA	7.05%	18.07%	18.37%	9.63%	14.42%	24.44%	3.59%		5.79%	13.89%
		NY		20.71%		39.52%	9.22%		19.69%			19.45%
		OR	27.19%	3.70%		5.95%	4.75%	16.33%		10.58%		6.89%
		WI	11.65%	13.11%	14.91%	1.27%	6.48%	6.84%		21.61%		14.87%
		NC	14.91%			22.43%	8.39%	8.19%			32.12%	
		PA	8.39%	4.16%		11.77%	3.42%	1.03%		38.79%	22.33%	5.74%
		TX	5.33%		13.49%	9.43%	8.77%	3.78%				4.41%
		MA			15.49%		3.59%	12.53%	10.72%			

Dashboard		Layout	Dimension Right										
Size		Device Preview	Dimension Left	America n Ambe..	America n Blond..	America n Brow..	America n Doubl..	America n IPA	America n Pale A..	America n Pale ..	America n Porter	Saison / Farmho..	Witbier
Desktop Browser (1000 x 8...			CO	9.95%	27.07%	22.52%		22.77%	16.18%	24.56%	6.42%	10.01%	18.19%
			WA	15.54%	13.16%	15.22%		18.18%	10.68%	30.86%	33.19%	29.75%	16.55%
			CA	7.05%	18.07%	18.37%	9.63%	14.42%	24.44%	3.59%		5.79%	13.89%
			NY		20.71%		39.52%	9.22%		19.69%			19.45%
			OR	27.19%	3.70%		5.95%	4.75%	16.33%	10.58%			6.89%
			WI	11.65%	13.11%	14.91%	1.27%	6.48%	6.84%		21.61%		14.87%
			NC	14.91%			22.43%	8.39%	8.19%			32.12%	
			PA	8.39%	4.16%		11.77%	3.42%	1.03%		38.79%	22.33%	5.74%
			TX	5.33%		13.49%	9.43%	8.77%	3.78%				4.41%
			MA			15.49%		3.59%	12.53%	10.72%			





Show Me More

Do you enjoy show me more? Get access to even more visualization types by buying the full version!

[Buy Now](#)

Select Data Sheet

Select the worksheet you want to retrieve data from. This worksheet will be the input for the visualization you pick in the next step.

Sankey 2018.2

Select a visualization



Sankey Diagram

sankey diagram uses:

2 Dimension(s) 1 Measure(s)



Radar Chart

radar chart uses:

2 Dimension(s) 1 Measure(s)



Horizon Chart

Get access to horizon chart by purchasing the full version.



Network Diagram

Get access to network diagram by purchasing the full version.

Customize Sankey Diagram

Level 1 Dimension Left

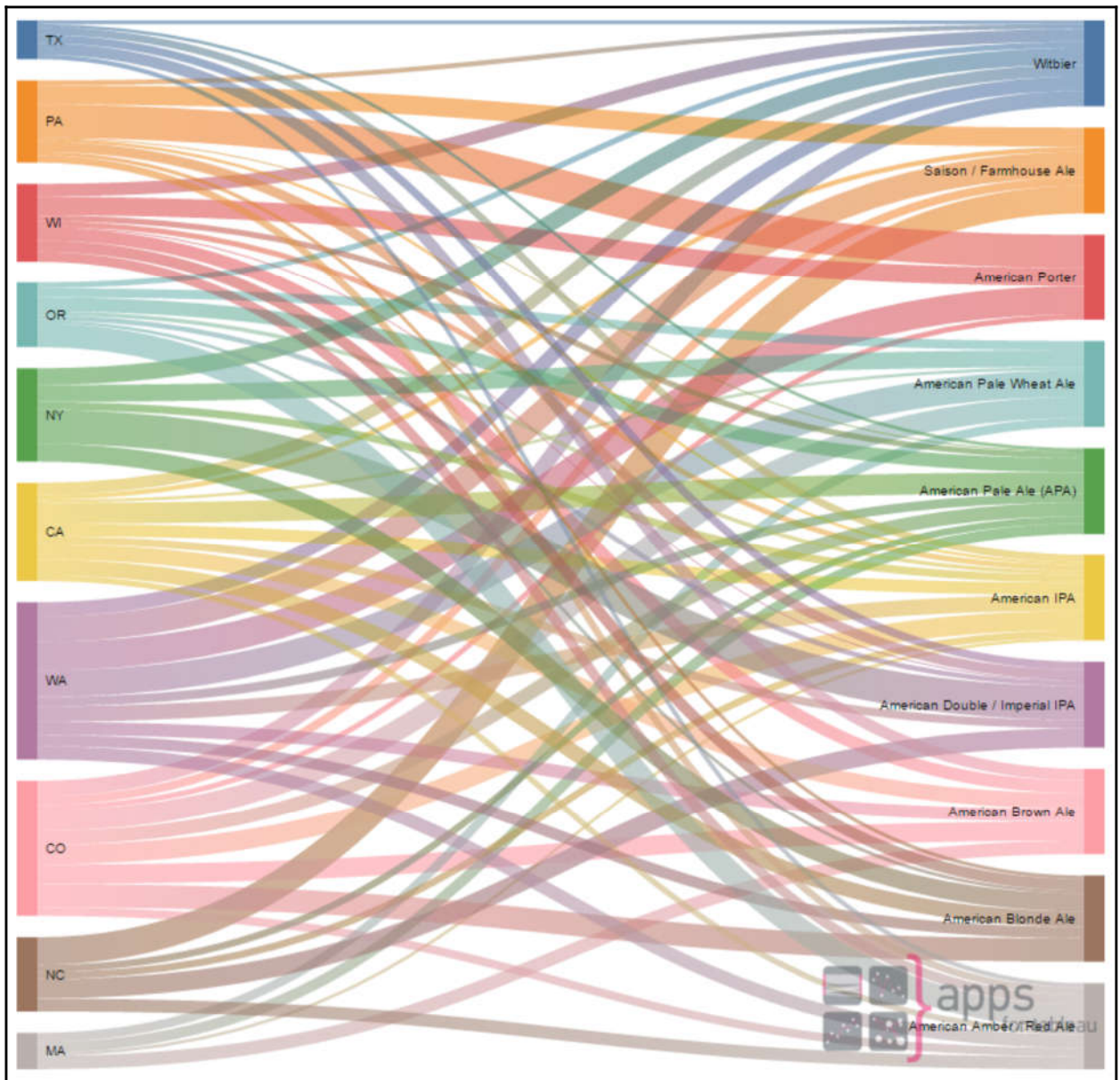
Level 2 Dimension Right

Need more dimensions? Buy show me more and unlock unlimited dimensions for this visualization.

Measure SUM(Chosen Measure)

Format None

Color by: unique value per dimension dimension value



Name:

Properties

Data type:

Current value:

Display format:

Allowable values: All List Range

List of values

Value	Display As
1	City
2	State
3	Style
4	Serving Size
5	Brewery Name
6	Beer Name
Add	

Name: Comment >>

Properties

Data type:

Current value:

Display format:

Allowable values: All List Range

List of values

Value	Display As
1	City
2	State
3	Style
4	Serving Size
5	Brewery Name
6	Beer Name
Add	

Dimension Left

```

CASE [Select Dimension Left]
WHEN 1 THEN [City]
WHEN 2 THEN [State]
WHEN 3 THEN [Style]
WHEN 4 THEN [Serving Size]
WHEN 5 THEN [Brewery Name]
WHEN 6 THEN [Beer Name]
END

```

Dimension Right

```
CASE [Select Dimension Right]
WHEN 1 THEN [City]
WHEN 2 THEN [State]
WHEN 3 THEN [Style]
WHEN 4 THEN [Serving Size]
WHEN 5 THEN [Brewery Name]
WHEN 6 THEN [Beer Name]
END
```

Chosen Measure

```
[F1]
```

Edit Parameter [Top Dimension Values]

Name: Comment >>

Properties

Data type:

Current value:

Display format:

Allowable values: All List Range

Range of values

Minimum: Set from Parameter ▾

Maximum: Set from Field ▾

Step size:

General Wildcard Condition Top

None
 By field:

Top Top Dimension Values by
 Chosen Measure Sum

By formula:

Top 10 by

Reset OK Cancel Apply

Path Frame

```
IF [Chosen Measure] = {FIXED [Dimension Left]: MIN([Chosen Measure])} THEN 0 ELSE 97 END
```

Path Index

Results are computed along Path Frame (bin).
 Index ()

T

```
IF [Path Index] < 50  
THEN (([Path Index]-1)%49)/4-6  
ELSE 12 - (([Path Index]-1)%49)/4-6  
END
```

Sigmoid

```
1/(1+EXP(1)^-[T])
```

Sankey Arm Size

Totals summarize values from Dimension Left, Dimension Right.

```
SUM([Chosen Measure])/TOTAL(SUM([Chosen Measure]))
```

Sankey Polygons

```
IF [Path Index] > 49  
THEN [Max Position Left Wrap]+([Max Position Right Wrap]-[Max Position Left Wrap])*[Sigmoid]  
ELSE [Min Position Left Wrap]+([Min Position Right Wrap]-[Min Position Left Wrap])*[Sigmoid]  
END
```

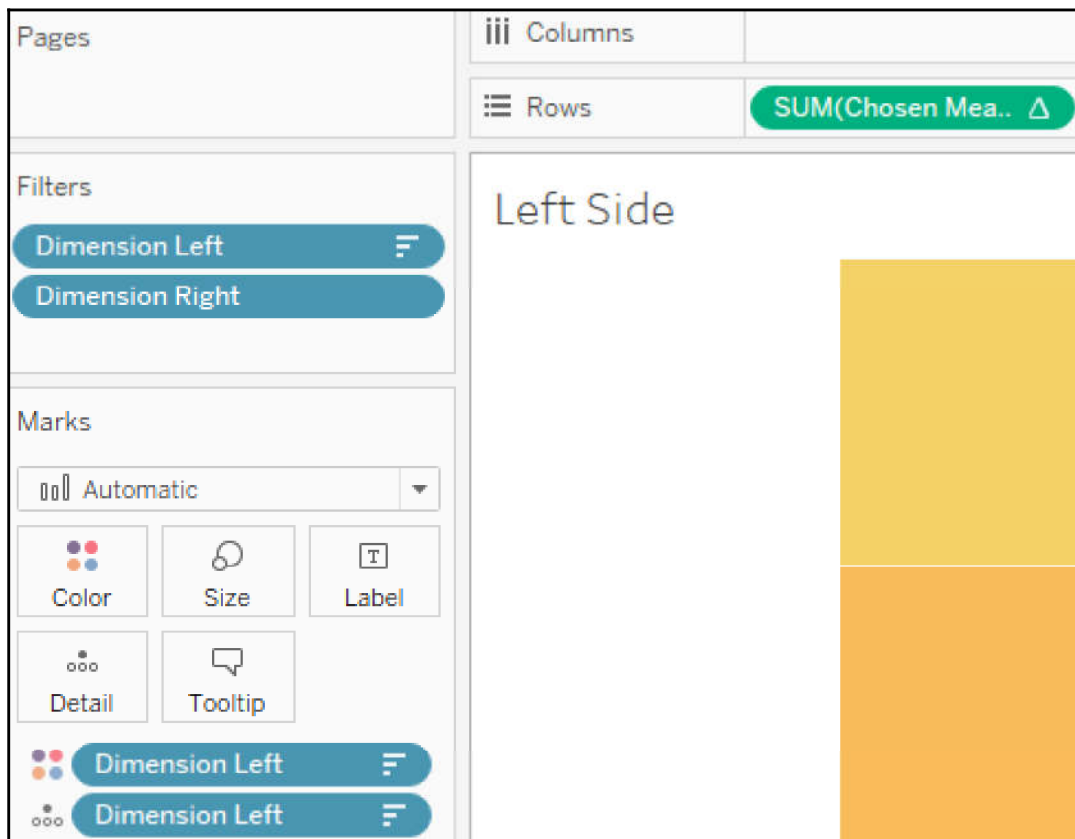


Table Calculation ×
% of Total Chosen Measure

Calculation Type

Percent of Total ▼

Compute total across all pages

Compute Using

Table (across)
Table (down)
Table
Cell
Specific Dimensions

Dimension Left

At the level ▼

Show calculation assistance

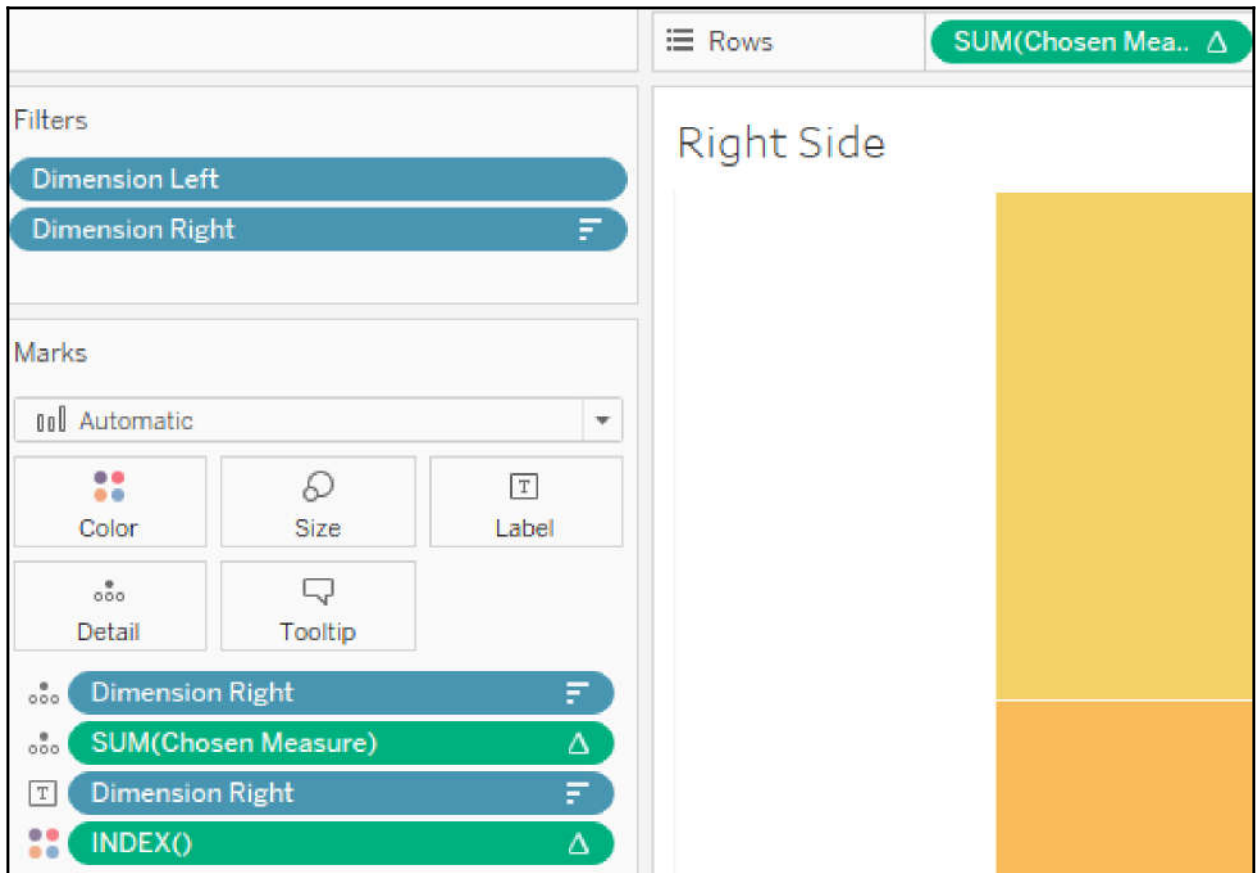


Table Calculation ✕
% of Total Chosen Measure

Calculation Type

Percent of Total ▼

Compute total across all pages

Compute Using

Table (across)
Table (down)
Table
Cell
Specific Dimensions

Dimension Right

At the level ▼

Show calculation assistance

Marks

Automatic

Color Size Label

Detail Tooltip

Dimension Right

SUM(Chosen Measure)

Dimension Right

INDEX ()

Marks

Automatic

INDEX() Color Size Label

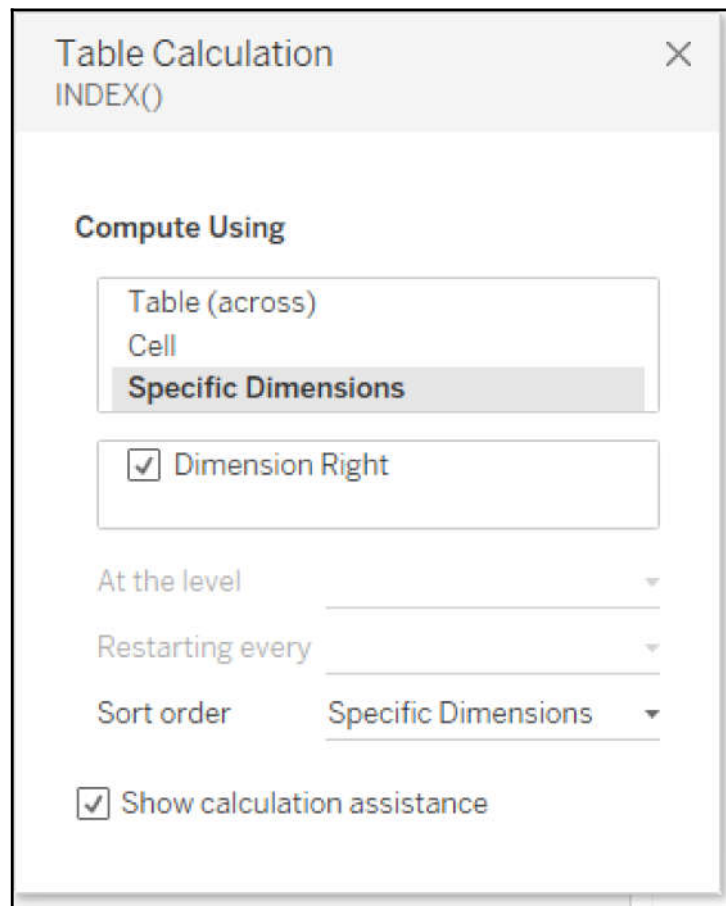
Detail Tooltip

Dimension Right

SUM(Chosen Measure)

Dimension Right

INDEX()



Pages

Columns T

Rows Sankey Polygons

Filters

- Dimension Left
- Dimension Right

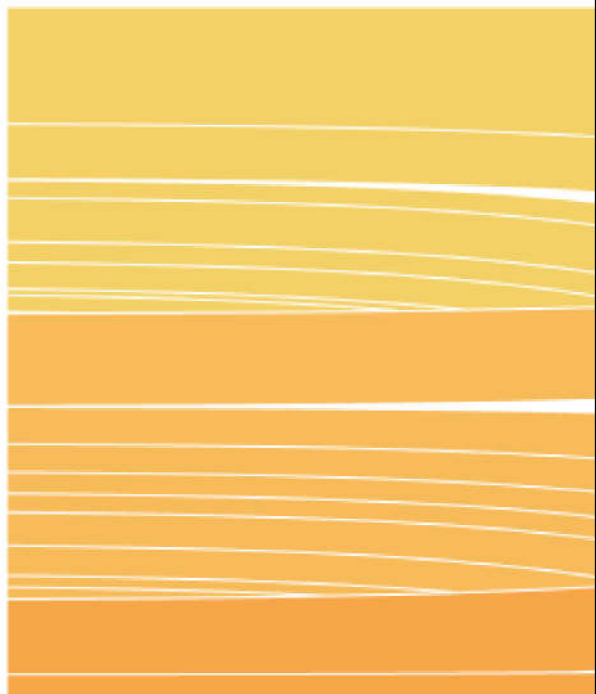
Marks

Polygon

- Color
- Size
- Label
- Detail
- Tooltip
- Path

- Dimension Left
- Dimension Right
- Path Frame (bin)
- Path Index

Sankey



The Sankey diagram visualization displays a series of horizontal bars connected by wavy lines, representing the flow of data between nodes. The bars are colored in shades of yellow and orange, and the wavy lines are white. The diagram is rendered using polygons, as indicated by the 'Sankey Polygons' row in the Rows section of the interface.

Table Calculation ✕
Sankey Polygons

Nested Calculations

Path Index ▼

- C Path Index
- Max Position Left Wrap
- Max Position Left
- Sankey Arm Size
- Max Position Right Wrap
- Max Position Right
- Min Position Left Wrap
- Min Position Left
- Max for Min Position Left
- Min Position Right Wrap
- Min Position Right
- Max for Min Position Right

Sort order Specific Dimensions ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations
Path Index ▼

Compute Using

Table (across)
Cell
Specific Dimensions

Path Frame (bin)
 Dimension Left
 Dimension Right

At the level ▼

Restarting every ▼

Sort order Specific Dimensions ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations

Max Position Left Wrap ▼

Null if there are not enough values

Compute Using

Table (across)

Cell

Specific Dimensions

Path Frame (bin)

Dimension Left

Dimension Right

At the level ▼

Restarting every ▼

Sort order Specific Dimensions ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations
Max Position Left ▼

Compute Using

Table (across)
Cell
Specific Dimensions

Dimension Left
 Dimension Right
 Path Frame (bin)

At the level **Deepest** ▼

Restarting every **None** ▼

Sort order **Specific Dimensions** ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations

Sankey Arm Size ▼

Compute total across all pages

Compute Using

Table (across)
Cell
Specific Dimensions

Path Frame (bin)
 Dimension Left
 Dimension Right

At the level **Deepest** ▼

Restarting every **None** ▼

Sort order **Specific Dimensions** ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations

Max Position Right Wrap ▼

Null if there are not enough values

Compute Using

Table (across)

Cell

Specific Dimensions

Path Frame (bin)

Dimension Left

Dimension Right

At the level ▼

Restarting every ▼

Sort order Specific Dimensions ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations
Max Position Right ▼

Compute Using

Table (across)
Cell
Specific Dimensions

Dimension Right
 Dimension Left
 Path Frame (bin)

At the level **Deepest** ▼

Restarting every **None** ▼

Sort order **Specific Dimensions** ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations

Min Position Left Wrap ▼

Null if there are not enough values

Compute Using

Table (across)

Cell

Specific Dimensions

Path Frame (bin)

Dimension Left

Dimension Right

At the level _____ ▼

Restarting every _____ ▼

Sort order Specific Dimensions ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations
Min Position Left ▼

Compute Using

Table (across)
Cell
Specific Dimensions

Dimension Left
 Dimension Right
 Path Frame (bin)

At the level **Deepest** ▼

Restarting every **None** ▼

Sort order **Specific Dimensions** ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations
Max for Min Position Left ▾

Compute Using

Table (across)
Cell
Specific Dimensions

Dimension Left
 Dimension Right
 Path Frame (bin)

At the level _____ ▾
Restarting every _____ ▾

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations

Min Position Right Wrap ▼

Null if there are not enough values

Compute Using

Table (across)

Cell

Specific Dimensions

Path Frame (bin)

Dimension Left

Dimension Right

At the level ▼

Restarting every ▼

Sort order Specific Dimensions ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations
Min Position Right ▼

Compute Using

Table (across)
Cell
Specific Dimensions

Dimension Right
 Dimension Left
 Path Frame (bin)

At the level **Deepest** ▼

Restarting every **None** ▼

Sort order **Specific Dimensions** ▼

Show calculation assistance

Table Calculation ✕
Sankey Polygons

Nested Calculations
Max for Min Position Left ▾

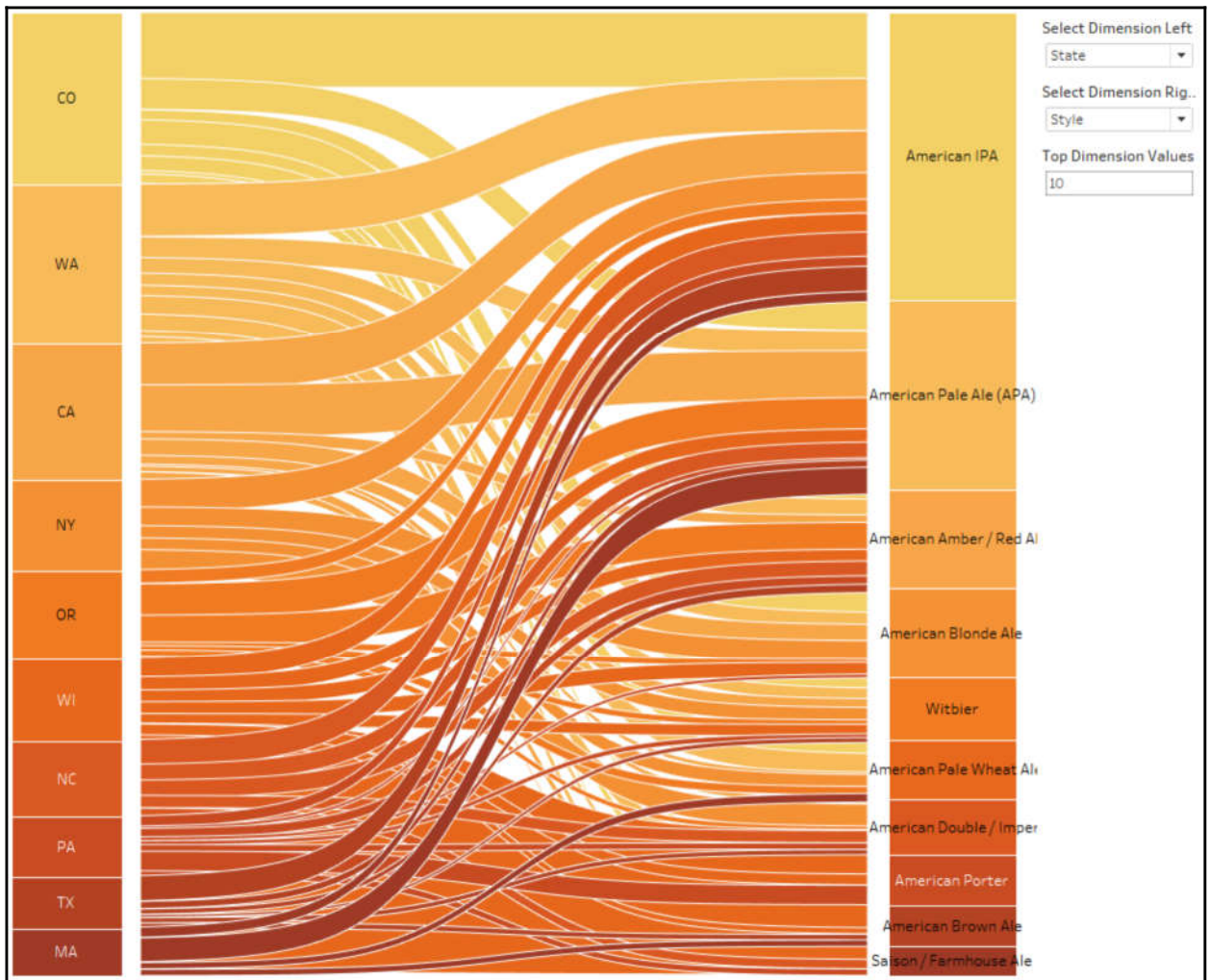
Compute Using

Table (across)
Cell
Specific Dimensions

Dimension Left
 Dimension Right
 Path Frame (bin)

At the level _____ ▾
Restarting every _____ ▾

Show calculation assistance



Marks

Automatic

Color Size **SUM/Raised H..** Detail Tooltip

The image shows a close-up of the 'Marks' shelf in a data visualization tool. The 'Automatic' dropdown is selected. The 'Color', 'Size', and 'Detail' buttons are highlighted with orange boxes. A green callout bubble points to the 'SUM/Raised H..' value on the 'Size' button, indicating that the size of the marks is determined by this field.

Table Calculation ✕
% of Total Raised Hands

Calculation Type
Percent of Total ▼

Compute total across all pages

Compute Using

Table (across)
Table (down)
Table
Pane (down)
Pane
Cell
Specific Dimensions

Parentschool Satisfaction
 Gender
 Grade ID

At the level ▼

Sort order Specific Dimensions ▼

Show calculation assistance

Measure Values ▼

Measure Values

SUM(Raised Hands) △

SUM(Raised Hands)

Raised Hands per Column

```
{EXCLUDE [Parentschool Satisfaction]:SUM([Raised Hands]) }
```

Measure Values

SUM(Raised Hands) △

SUM(Raised Hands)

ATTR(Raised Hands per Column)

Results are computed along Table (across).

```
//If it's the first row in partition
IF FIRST()==0 THEN
    //return this value
    MIN([Raised Hands per Column])

//check if this grade is NOT the same as the previous one
ELSEIF MIN([Grade ID]) != LOOKUP(MIN([Grade ID]),-1) THEN
    //Add the previous value of raised hands per column to this one
    PREVIOUS_VALUE(0) + MIN([Raised Hands per Column])

//check if gender is NOT the same as the previous one
ELSEIF MIN([Gender]) != LOOKUP(MIN([Gender]),-1) THEN
    //add the previous value of raised hands per column to this one
    PREVIOUS_VALUE(0) + MIN([Raised Hands per Column])

ELSE
    //it's the same grade and gender, show the same raised hands value
    PREVIOUS_VALUE(0)

END
```


Grade ID	Gender	Parentschool Satisfaction	Raised Hands	% of Total Raised Hands along Parents..	Raised Hands per Column	# of Raised Hands, Grade, Gender ID, Pa..
G-02	F	Bad	499	20.18%	2,473	2,473
		Good	1,974	79.82%	2,473	2,473
	M	Bad	1,072	37.00%	2,897	5,370
		Good	1,825	63.00%	2,897	5,370
G-04	F	Bad	272	24.46%	1,112	6,482
		Good	840	75.54%	1,112	6,482
	M	Bad	345	30.50%	1,131	7,613
		Good	786	69.50%	1,131	7,613

Marks

Automatic

Color Size Text

Measure Values
Detail Tooltip

Measure Values

Marks

Automatic

Color Size Label

Detail Tooltip

Measure Values

Grade ID

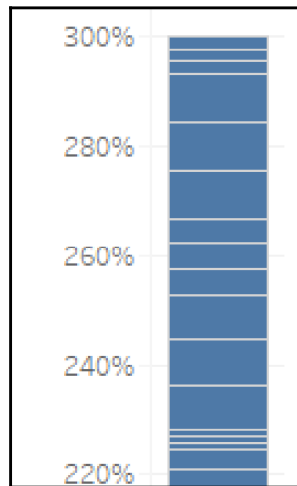
Gender

Parentschool Satisfaction






Rows

SUM(Raised Hand.. Δ)

Columns	
Rows	SUM(Raised Hand.. Δ)



Columns	# of Raised Hands.. Δ
Rows	 SUM(Raised Hand.. Δ)

Marks	
 Automatic	Δ
 Automatic	
 Bar	
 Line	

Marks

Bar

ATTR(Raised Hands per Column)

Color

Size

Label

Detail

Tooltip

Measure Values

Grade ID

Gender

Parentschool Satisfaction

Measure Values

SUM(Raised Hands)

ATTR(Raised Hands per Column)

Size

Label

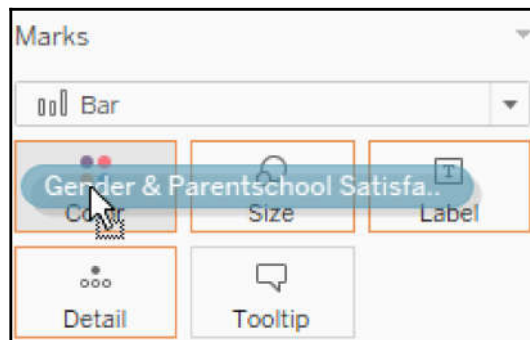
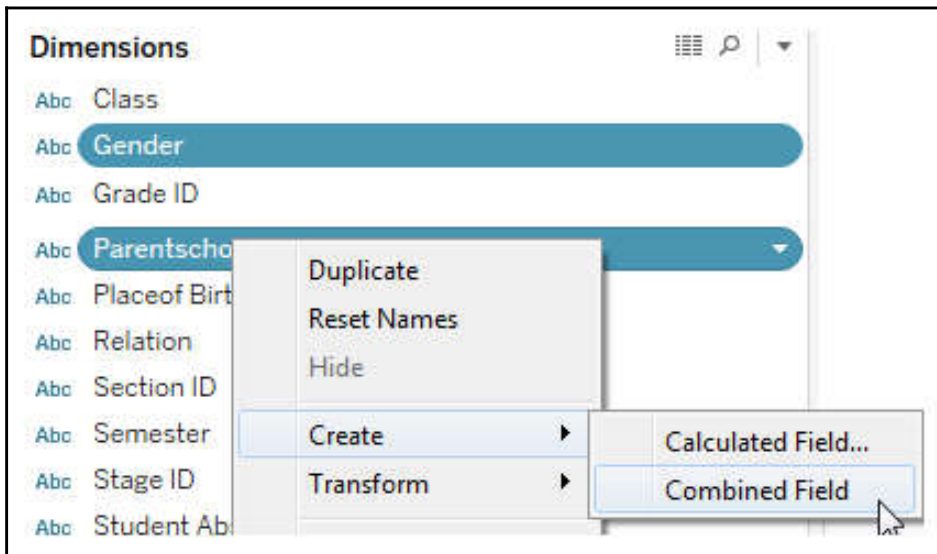
Manual Fixed

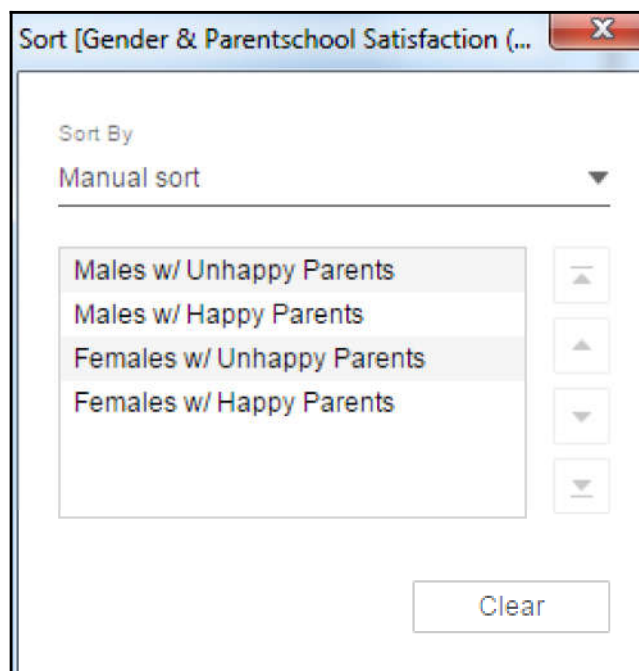
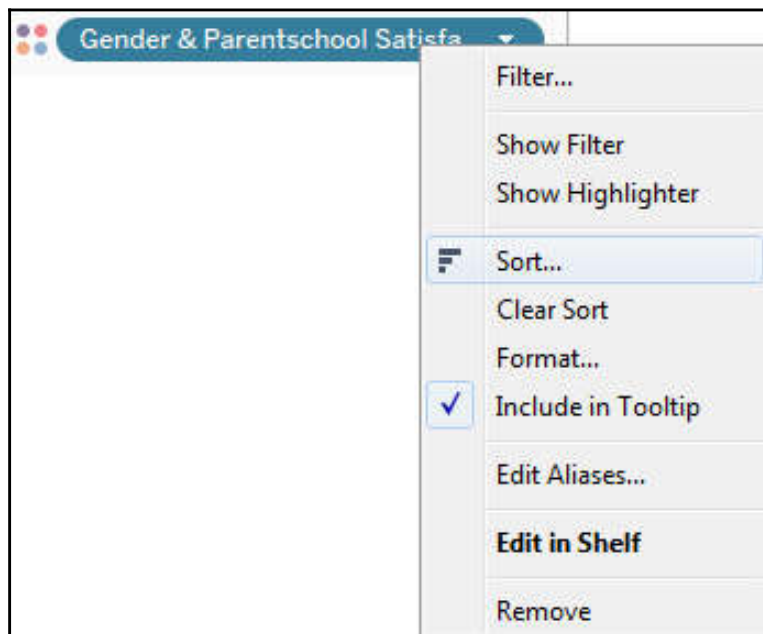
Width in Axis Units

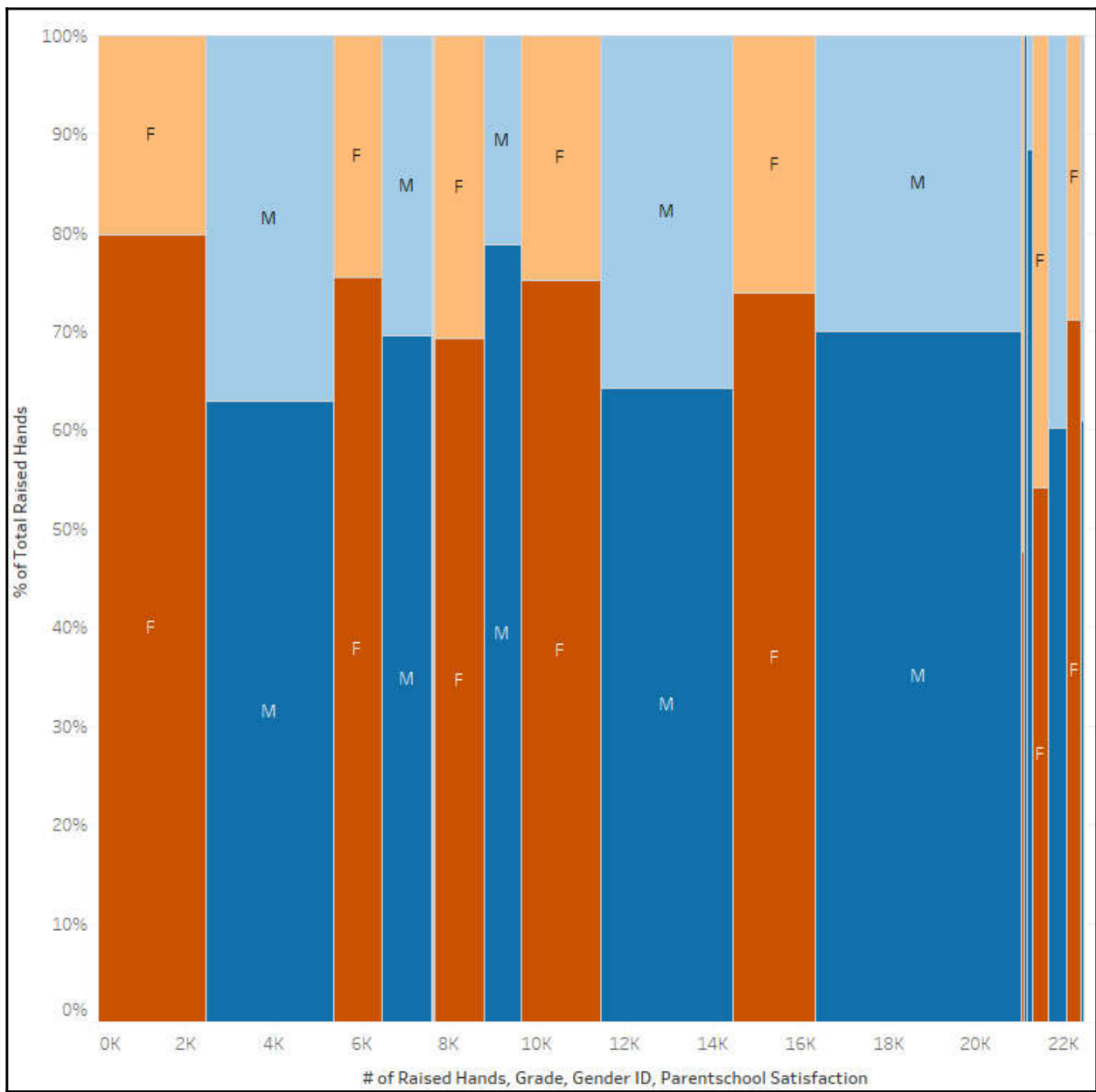
R(Raised Hands per Column)

Alignment

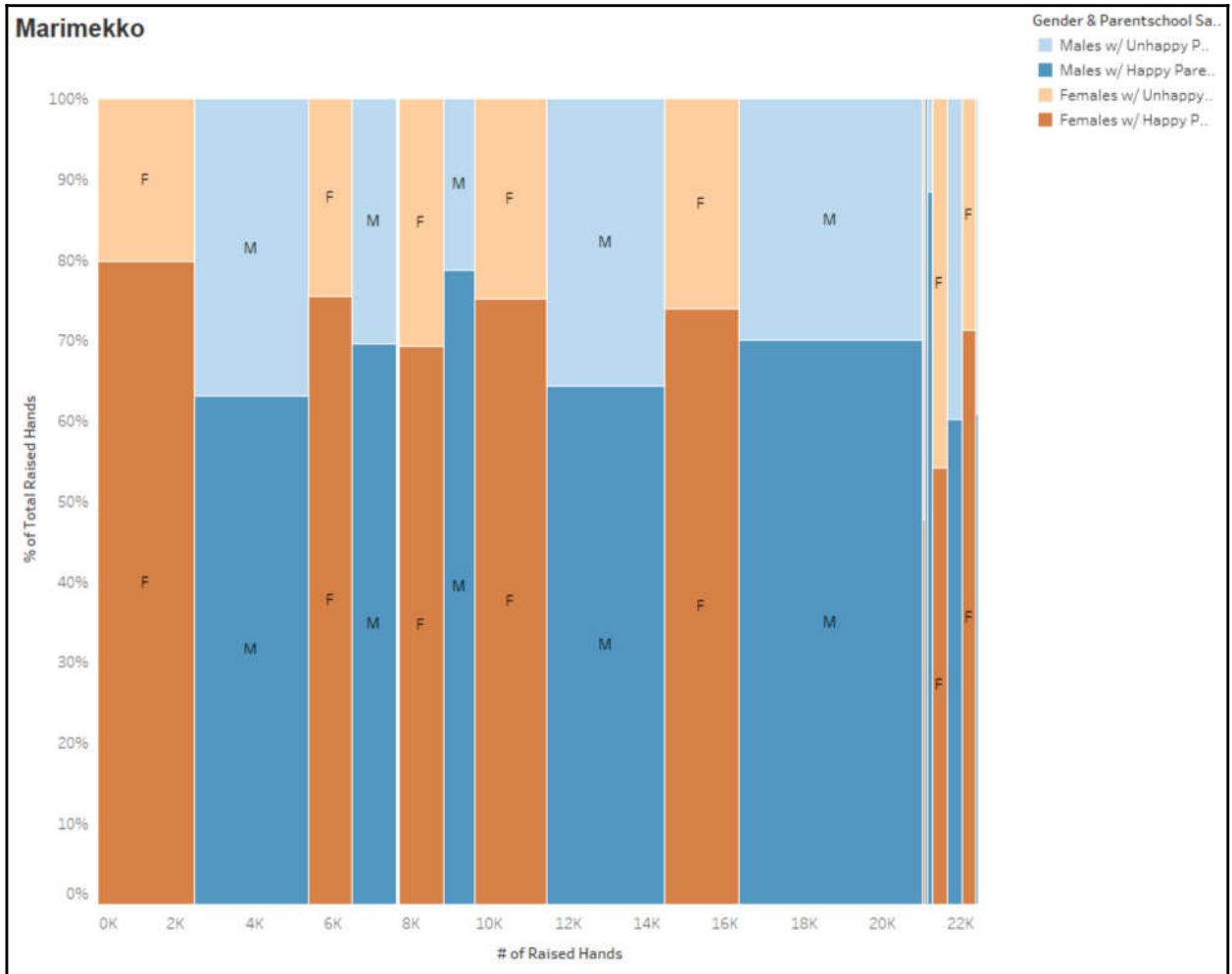
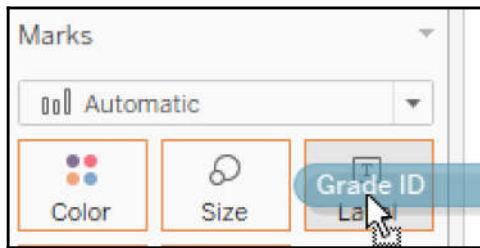
Right

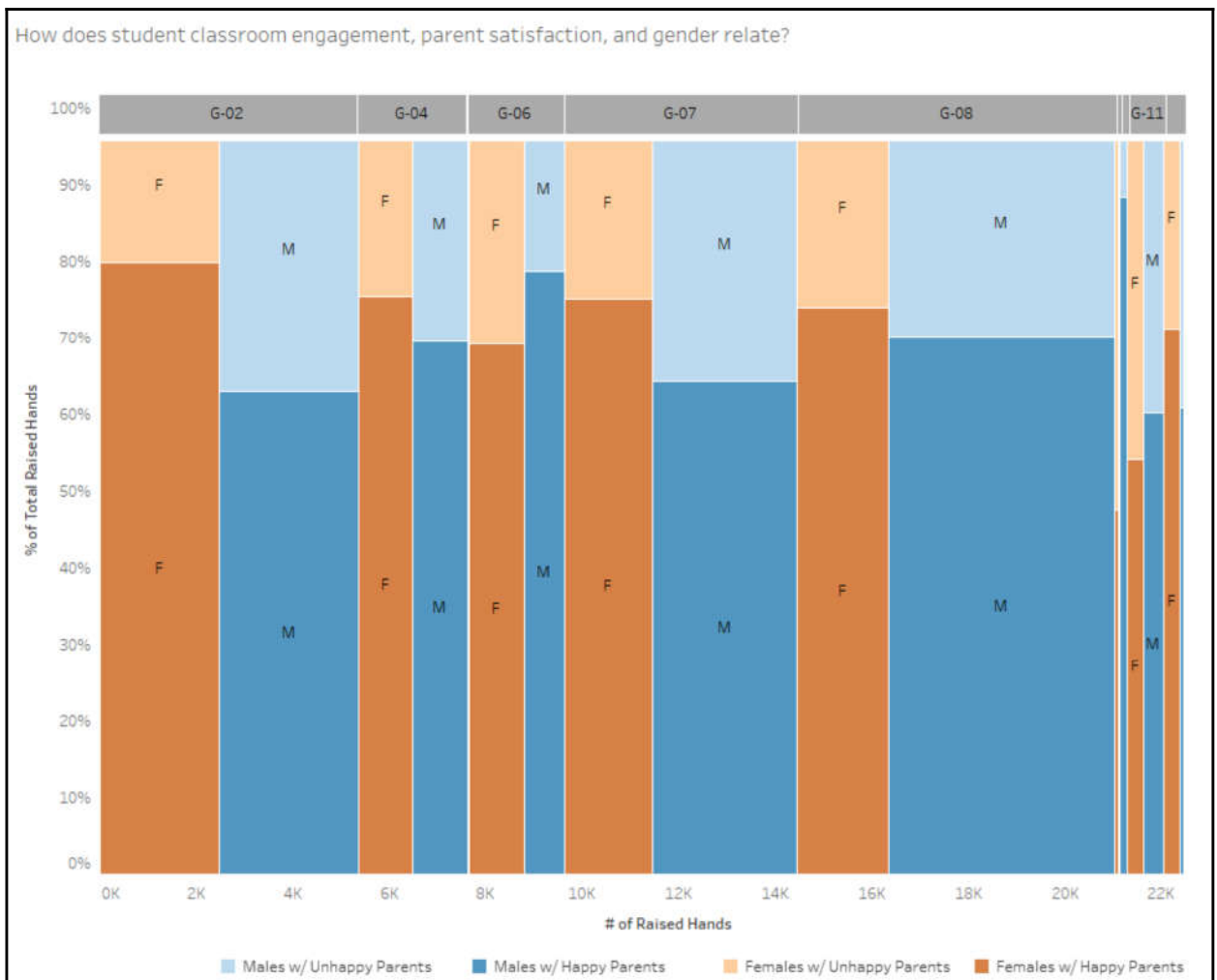
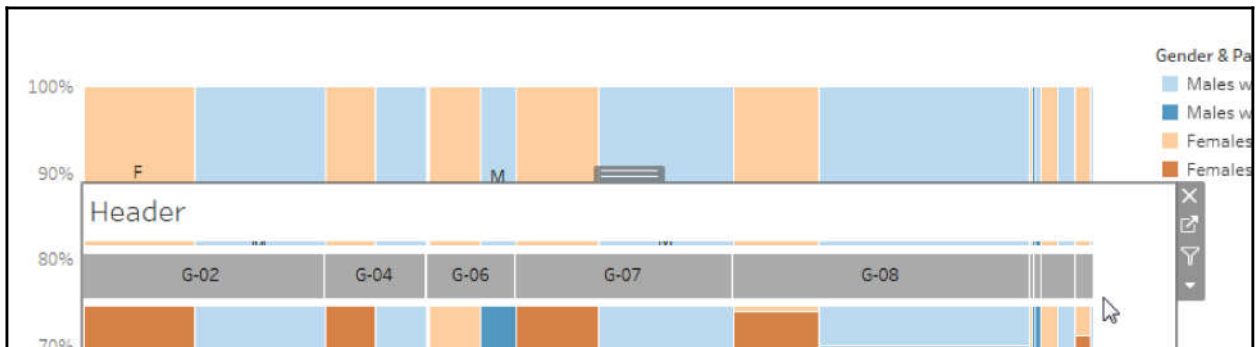






iii Columns SUM(Raised Hands)





Connections Add

- Data USA - Ma...utes by State
Text file
- hexmap_plots
Microsoft Excel

Sheets ρ

Use Data Interpreter
Data Interpreter might be able to clean your Microsoft Excel workbook.

- Sheet1
- New Union

Data USA - Map of Commuti... | Sheet1

Join ×

Inner Left Right Full Outer

Data Source		Sheet1	
Geo Name	=	State	
<i>Add new join clause</i>			

Sort fields: Data source order

#	Abc	Abc	#	#	#	⊕	Abc
Year	Geo Name	Geo	Long_Commute_...	Row	Column	State	Abbreviation
2017	Alaska	04000US02	0.162000	0	0.5000	Alaska	AK

Columns	AVG(Column)
Rows	AVG(Row)

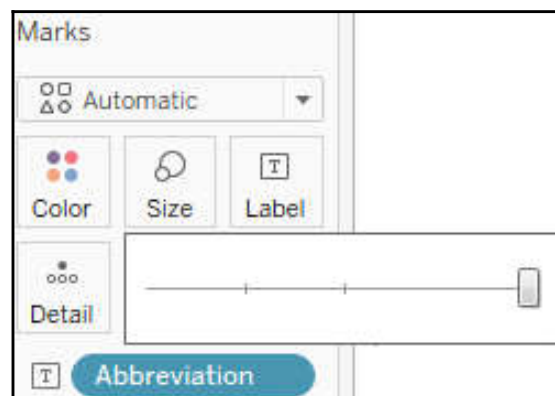
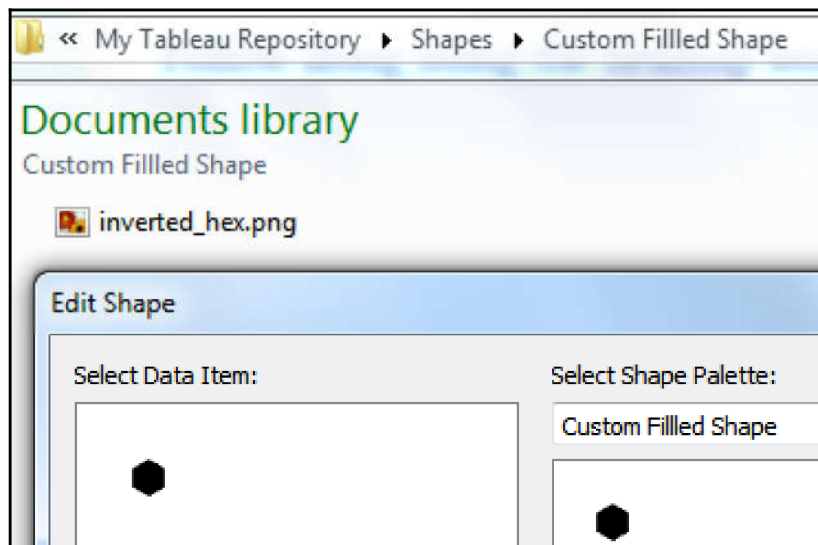
Marks ▼

Automatic ▼

Color	Size	Label
Detail	Tooltip	Shape

Abbreviation

General	Tick Marks
Range	
<input checked="" type="radio"/> Automatic <input type="radio"/> Uniform axis range for all rows or columns <input type="radio"/> Independent axis ranges for each row or column <input type="radio"/> Fixed	<input checked="" type="checkbox"/> Include zero
Automatic ▼	Automatic ▼
-0.461196106	8.461196106
Scale	
<input checked="" type="checkbox"/> Reversed <input type="checkbox"/> Logarithmic	
Axis Titles	
Title Avg. Row	
Subtitle <input checked="" type="checkbox"/> Automatic	
<input type="button" value="Reset"/>	



Marks

Automatic

Color Size Label

Color

Edit Colors...

Opacity

100%

Effects

Border: Halo:

Palette:

Custom Sequential

0.00% 50.00%

Stepped Color 5 Steps

Reversed

Use Full Color Range

Include Totals << Advanced

Start: End:

0 0.5

Center:

0.25

Reset OK Cancel Apply

Marks

Automatic

Color Size Label

Detail Tooltip

SUM(Long) Abbreviation

Show mark labels

Label Appearance

Text: <Abbreviation>

Font:

Alignment: Middle Center

Marks to Label

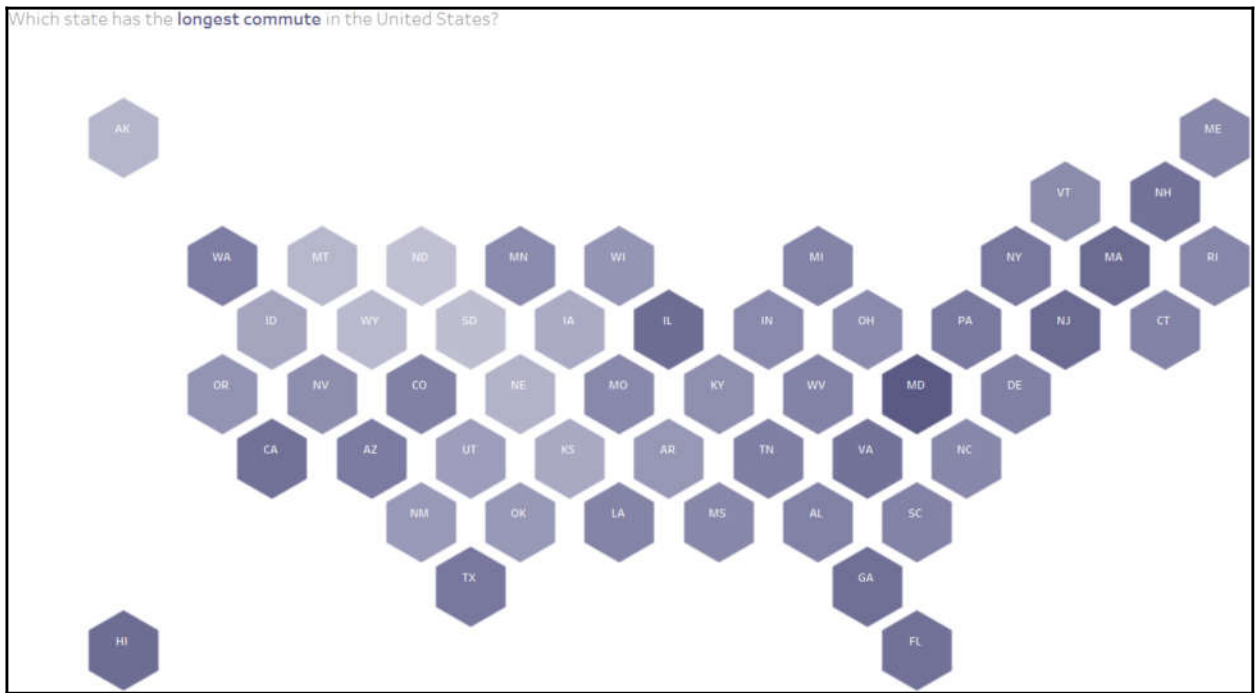
All Selected

Min/Max Highlighted

Options

Allow labels to overlap other marks

Which state has the longest commute in the United States?



Sheet1 (Waffle Frame)

Sheet1

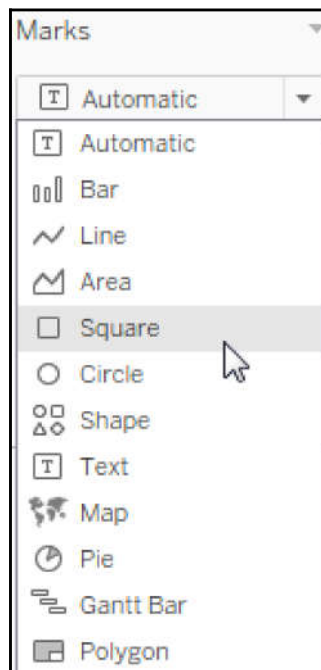
Sort fields Data source order

# Sheet1 Rows	# Sheet1 Columns	# Sheet1 Percentage
1	1	1%
1	2	2%
1	3	3%
1	4	4%
1	5	5%
1	6	6%
1	7	7%
1	8	8%
1	9	9%
1	10	10%
2	1	11%
2	2	12%
2	3	13%
2	4	14%
2	5	15%

iii Columns	Columns
Rows	Rows

Rows		Columns									
	☰	1	2	3	4	5	6	7	8	9	10
10		91%	92%	93%	94%	95%	96%	97%	98%	99%	100%
9		81%	82%	83%	84%	85%	86%	87%	88%	89%	90%
8		71%	72%	73%	74%	75%	76%	77%	78%	79%	80%
7		61%	62%	63%	64%	65%	66%	67%	68%	69%	70%
6		51%	52%	53%	54%	55%	56%	57%	58%	59%	60%
5		41%	42%	43%	44%	45%	46%	47%	48%	49%	50%
4		31%	32%	33%	34%	35%	36%	37%	38%	39%	40%
3		21%	22%	23%	24%	25%	26%	27%	28%	29%	30%
2		11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1		1%	2%	3%	4%	5%	6%	7%	8%	9%	10%

Rows		Columns						
	☰	1	2	3	4	5	6	7
10		91%	92%	93%	94%	95%	96%	97%
9		81%	82%	83%	84%	85%	86%	87%

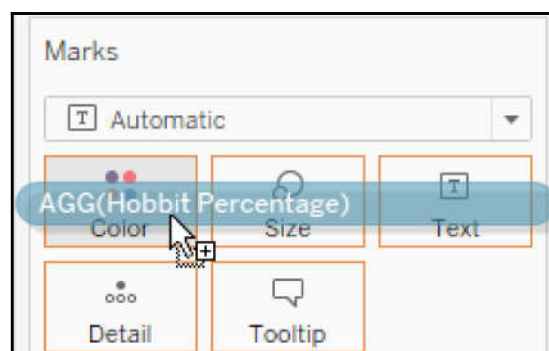


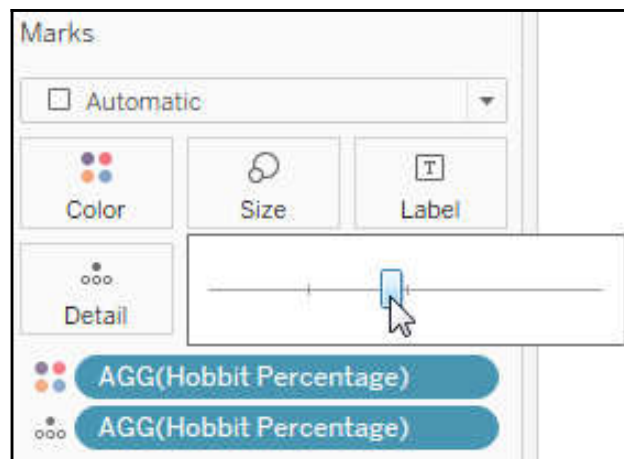
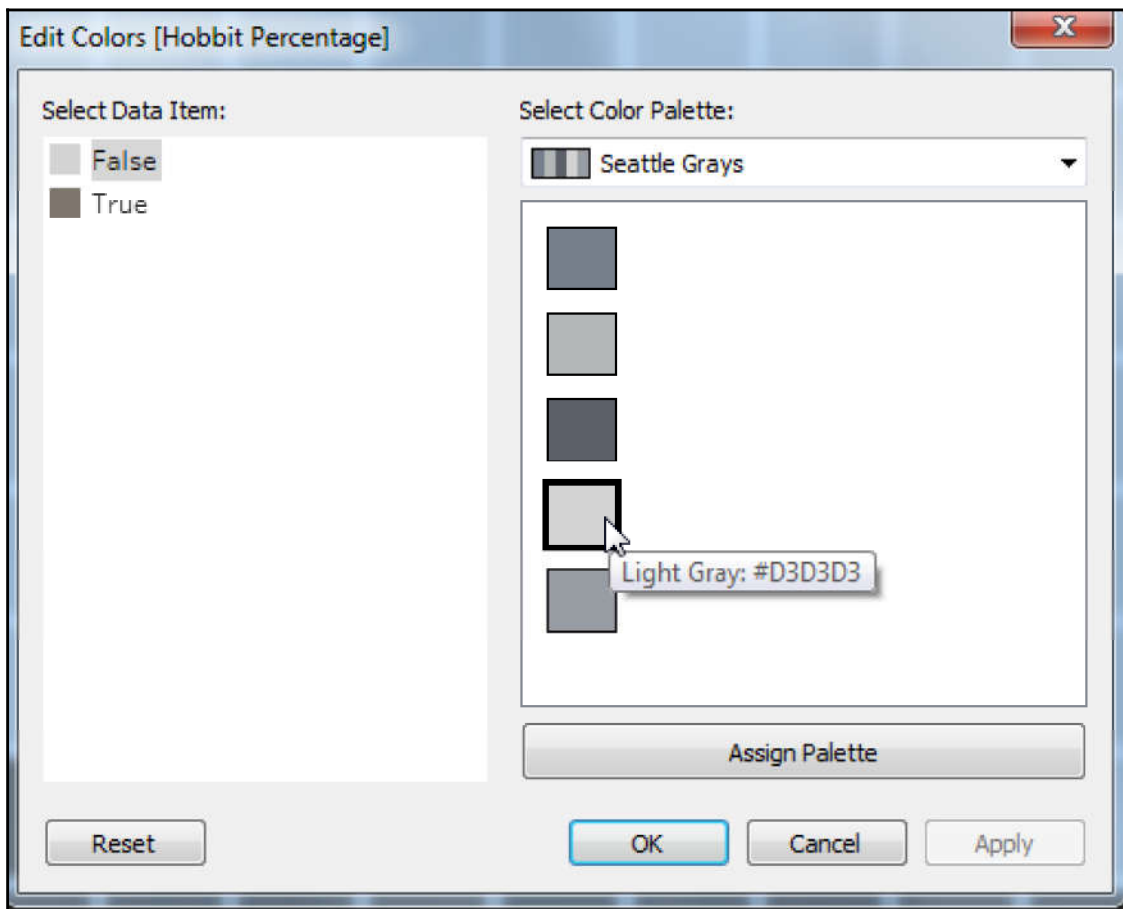
Hobbit WordsByCharacter

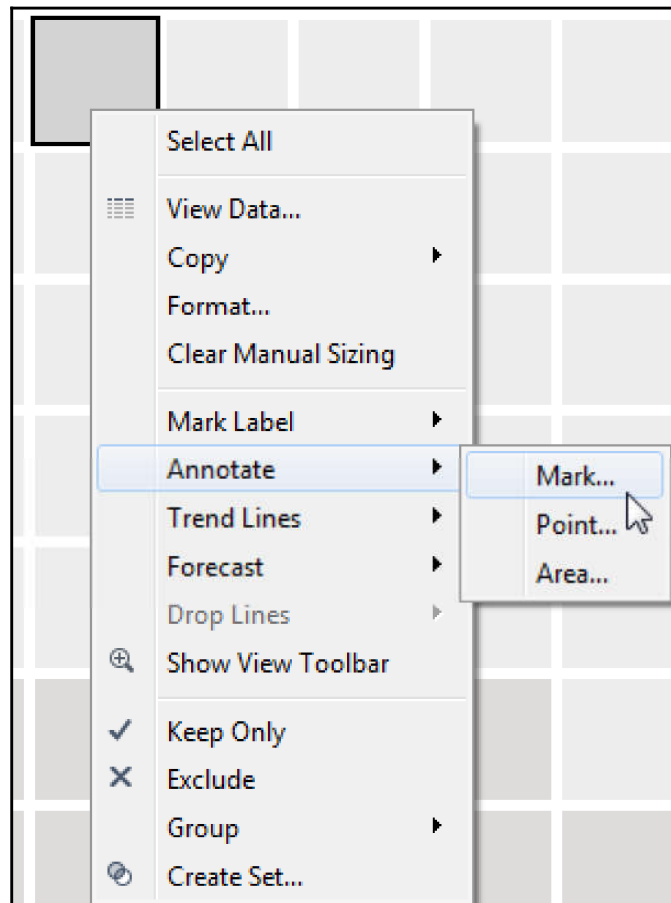
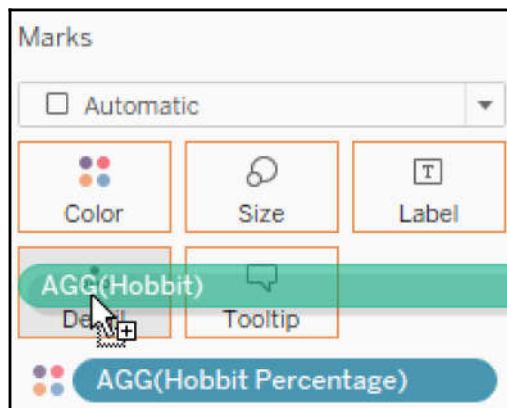
```
SUM(IF [Race] = "Hobbit" THEN [Words] END)/SUM([Words])
```

Hobbit Percentage Sheet1 (Waffle Frame)

```
[WordsByCharacter].[Hobbit] >= sum([Percentage])
```







Film Percentage WordsByCharacter

```
IF AVG([Sheet1 (Waffle Frame)].[Rows]*10)-(10-[Sheet1 (Waffle Frame)].[Columns])
  <= ROUND([Film, Fellowship]*100) THEN "The Fellowship Of Ring"

ELSEIF AVG([Sheet1 (Waffle Frame)].[Rows]*10)-(10-[Sheet1 (Waffle Frame)].[Columns])
  <= ROUND([Film, Fellowship] + [Film, Towers]*100) THEN "The Two Towers"

ELSE "The Return Of The King"

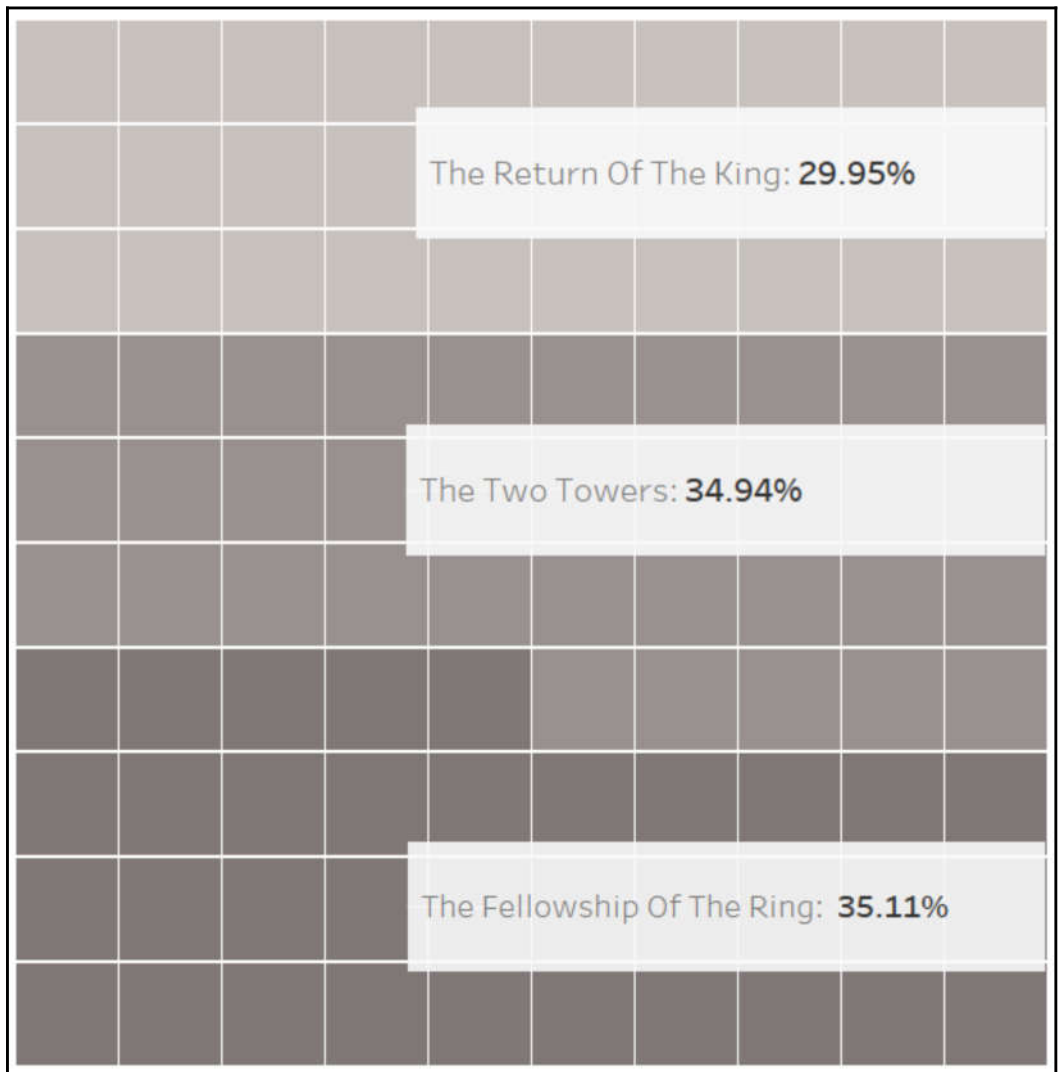
END
```

Marks

Square

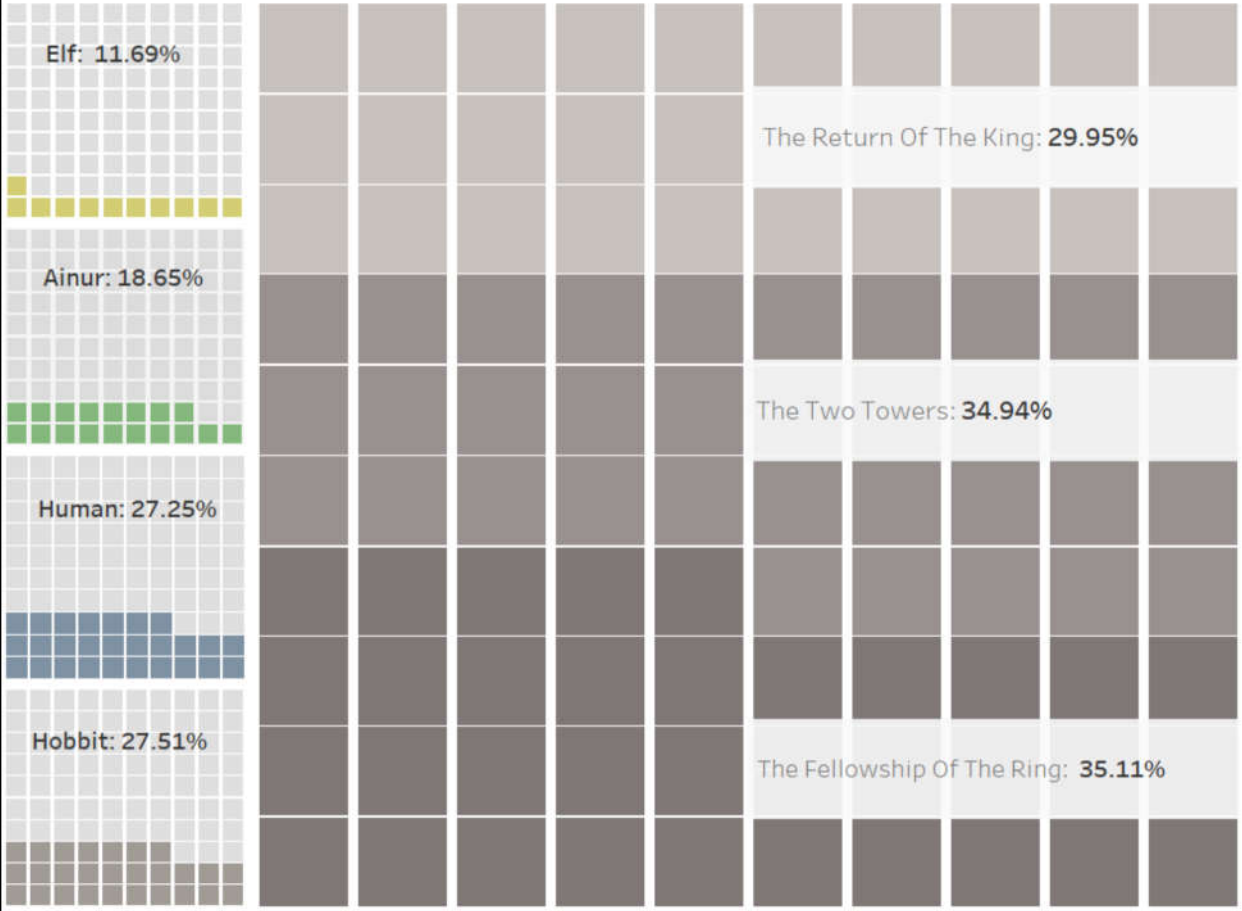
ACC (Film Percentage) Copy Size Label

Detail Tooltip



What characters had the most to say in the Lord of the Rings Trilogy?
Which trilogy had the largest percentage of words?

Film
(All) ▾



Chapter 10: Tableau for Big Data

Roles > RedshiftS3Access

Summary

Role ARN	arn:aws:iam::615381814665:role/RedshiftS3Access
Role description	Allows Redshift clusters to call AWS services on your behalf. Edit
Instance Profile ARNs	
Path	/
Creation time	2018-10-07 11:10 PDT
Maximum CLI/API session duration	1 hour Edit

AWS services

Amazon Redshift
Fast, Simple, Cost-Effective Data Warehousing

Launch your Amazon Redshift cluster - Quick launch | [Switch to advanced settings](#)

Cluster specifications

Amazon Redshift offers On-demand and Reserved Instances pricing options. Save up to 75% over On-demand rates through Reserved Instances. To learn more, see [Amazon Redshift Pricing](#)

Node type*	dc2.large Storage type: SSD Storage: 0.16 TB/node Compute optimized
Number of compute nodes*	1 x 0.16 TB/node = 0.16 TB storage available
Cluster identifier*	redshift-cluster-1
Master user name*	awsuser
Master user password*
Confirm password*
Database port*	8192
Available IAM roles	Choose a role <ul style="list-style-type: none"><input checked="" type="radio"/> RedshiftS3Access

Cancel

Launch cluster

Edit inbound rules

Type	Protocol	Port Range	Source	Description
All traffic	All	0 - 65535	Custom	e.g. SSH for Admin Desktop
Custom TCP	TCP	8192	Custom	e.g. SSH for Admin Desktop

Add Rule

NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.


Cancel

Save

Create new connection

Connection Settings

AWS / Redshift connection settings



General Driver properties

Host: Port:

Database:

User:

Password: Save password locally

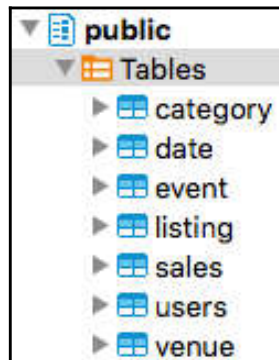
Local Client:

Settings

- Show non-default databases
- Show template databases

[Network settings \(SSH, SSL, Proxy, ...\)](#)
[Connection details \(name, type, ...\)](#)

Driver Name:



```
select count(*) from customer; --3000000 rows
select count(*) from dwdate; --2556 rows
select count(*) from lineorder; --600037902 rows
select count(*) from part; --1400000 rows
select count(*) from supplier; --1000000 rows
```

Amazon Redshift

Server: Port:

Database:

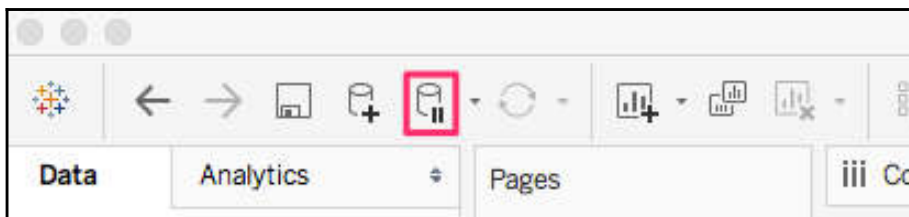
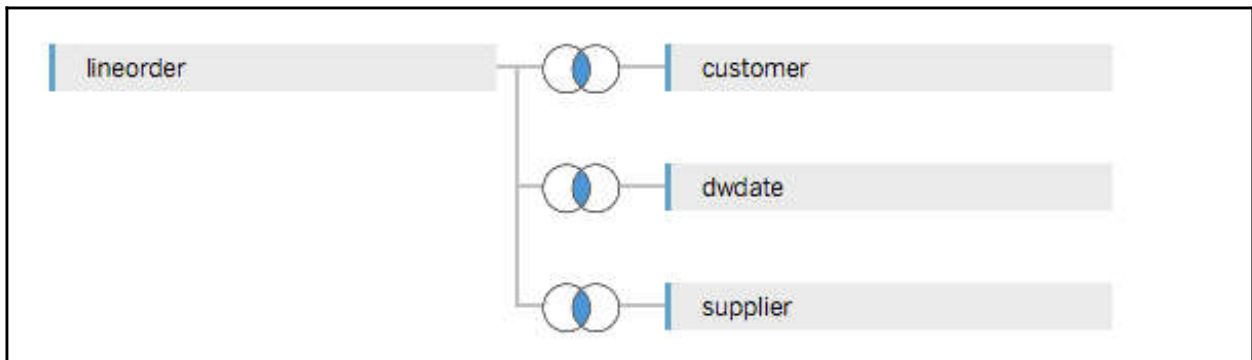
Enter information to sign in to the database:

Username:

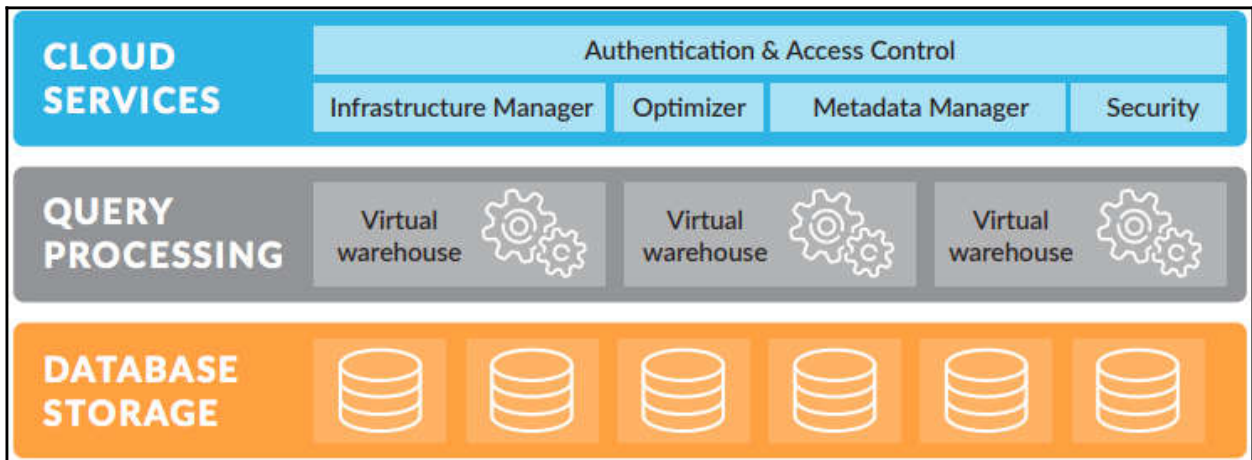
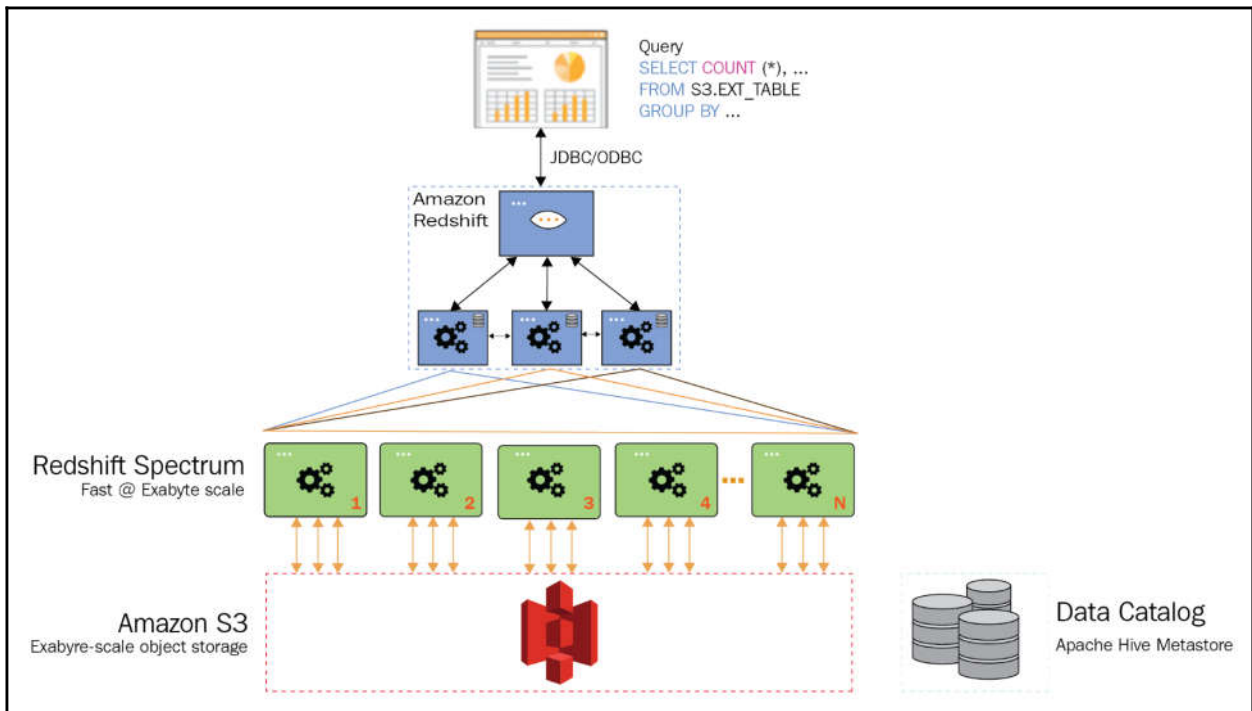
Password:

Require SSL

[Initial SQL...](#)



ABC QUERY PLAN	
1	XN HashAggregate (cost=8838907488.18..8838907488.19 rows=1 width=36)
2	-> XN Hash Join DS_BCAST_INNER (cost=60110.78..8838907483.69 rows=449 width=36)
3	Hash Cond: ("outer".lo_orderdate = "inner".d_datekey)
4	-> XN Hash Join DS_BCAST_INNER (cost=60078.75..8833946984.65 rows=37002 width=36)
5	Hash Cond: ("outer".lo_custkey = "inner".c_custkey)
6	-> XN Hash Join DS_BCAST_INNER (cost=15019.67..2216602842.55 rows=4697040 width=26)
7	Hash Cond: ("outer".lo_suppkey = "inner".s_suppkey)
8	-> XN Seq Scan on lineorder (cost=0.00..6000378.88 rows=600037888 width=16)
9	-> XN Hash (cost=15000.00..15000.00 rows=7868 width=18)
10	-> XN Seq Scan on supplier (cost=0.00..15000.00 rows=7868 width=18)
11	Filter: (((s_city)::text = 'UNITED K11'::text) OR ((s_city)::text = 'UNITED K15'::text))
12	-> XN Hash (cost=45000.00..45000.00 rows=23633 width=18)
13	-> XN Seq Scan on customer (cost=0.00..45000.00 rows=23633 width=18)
14	Filter: (((c_city)::text = 'UNITED K11'::text) OR ((c_city)::text = 'UNITED K15'::text))
15	-> XN Hash (cost=31.95..31.95 rows=31 width=8)
16	-> XN Seq Scan on dwhdate (cost=0.00..31.95 rows=31 width=8)
17	Filter: ((d_yearmonth)::text = 'Dec1997'::text)



```

tableaucookbook$SF_TUTS_WH@SF_TUTS.PUBLIC>copy into emp_basic
from @emp_basic
file_format = (type = csv field_optionally_enclosed_by='')
pattern = '*.employees@[1-5].csv.gz'
on_error = 'skip_file';

```

file	status	rows_parsed	rows_loaded	error_limit	errors_seen	first_error	first_error_line	first_error_character	first_error_column_name
employees03.csv.gz	LOADED	5	5	1	0	NULL		NULL	NULL
employees05.csv.gz	LOADED	5	5	1	0	NULL		NULL	NULL
employees02.csv.gz	LOADED	5	5	1	0	NULL		NULL	NULL
employees01.csv.gz	LOADED	5	5	1	0	NULL		NULL	NULL
employees04.csv.gz	LOADED	5	5	1	0	NULL		NULL	NULL

5 Row(s) produced. Time Elapsed: 3.128s

Snowflake
DZ27900.snowflakecomputing.com

Server:

Role:

Enter information to sign in to the server:

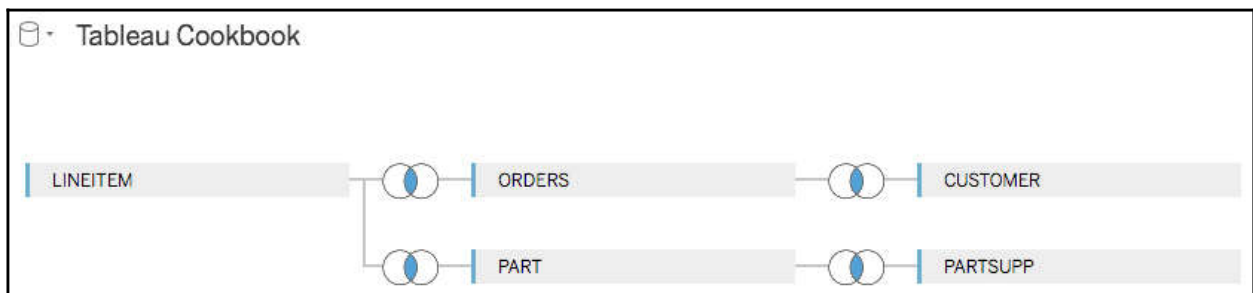
Authentication:

Username:

Password:

SAML IdP(Okta):

[Initial SQL...](#)



Pages

Columns: Measure Names

Rows: L.Returnflag, L.Linestatus

Filters: L.Shipdate, Measure Names

Marks: Automatic, Color, Size, Text, Detail, Tooltip, Measure Values

Measure Values:

- SUM(L.Quantity)
- SUM(L.Extendedprice)
- SUM(Extended Discounted Price)
- SUM(Extended Discounted Price with Tax)
- AVG(L.Quantity)
- AVG(L.Extendedprice)
- AVG(L.Discount)
- SUM(Number of Records)

Sheet 1

L.Returnflag	L.Linestatus	L.Quantity	L.Extendedprice	Extended Price	Extended Discounted Price	Avg. L.Quantity	Avg. L.Extendedprice	Avg. L.Discount	Number of Records
A	F	150,936,428	226,346,217,603	215,033,028,539	223,636,260,891	26	38,273	0	5,913,972
N	F	3,965,668	5,950,018,842	5,652,328,672	5,878,596,893	26	38,284	0	155,416
O		306,534,072	459,740,841,637	436,758,367,590	454,244,097,052	26	38,248	0	12,019,992
R	F	150,879,012	226,272,165,524	214,965,170,738	223,558,476,479	26	38,251	0	5,915,480

Pages

Columns: AVG(LON)

Rows: AVG(LAT)

Filters:

Marks: Automatic, Color, Size, Label, Detail, Tooltip, SUM(TEMP_ML...), V:CITY.NAME..., ID

Sheet 2

© OpenStreetMap contributors

```
f45c89c859a9:~$ ssh -i ~/.ssh/tableua-cookbook.pem hadoop@ec2-18-215-157-216.compute-1.amazonaws.com
Last login: Sat Oct 13 16:46:34 2018

  _| _|_ )
  _| ( _| /  Amazon Linux AMI
  ---|\\_||_||

https://aws.amazon.com/amazon-linux-ami/2018.03-release-notes/
15 package(s) needed for security, out of 28 available
Run "sudo yum update" to apply all updates.

EEEEEEEEEEEEEEEEEEEE MMMMMMM      MMMMMMM RRRRRRRRRRRRRR
E::::::::::::::::::E M:::::M      M:::::M R:::::R
EE:::::EEEEEEEE::::E M:::::M      M:::::M R:::::RRRRRR::::R
E::::E      EEEEE M:::::M      M:::::M RR::::R      R::::R
E::::E      M:::::M::M M:::M::::M R:::R      R::::R
E:::::EEEEEEEE M::::M M:::M M:::M M::::M R:::RRRRR::::R
E:::::EEEEEEEE M::::M M:::M::M M::::M R:::::RR
E::::E      M::::M M:::M M::::M R:::R      R::::R
E::::E      EEEEE M::::M      MMM      M::::M R:::R      R::::R
EE:::::EEEEEEEE::::E M::::M      M::::M R:::R      R::::R
E:::::EEEEEEEE::::E M::::M      M::::M RR::::R      R::::R
EEEEEEEEEEEEEEEEEEEE MMMMMMM      MMMMMMM RRRRRRR      RRRRRR

[hadoop@ip-172-31-17-64 ~]$
```

```
hive> SELECT os, COUNT(*) count FROM cloudfront_logs GROUP BY os;
Query ID = hadoop_20181013171623_9c7dfe43-9086-47c6-8e36-4ab61d56630e
Total jobs = 1
Launching Job 1 out of 1
Tez session was closed. Reopening...
Session re-established.
Status: Running (Executing on YARN cluster with App id application_1539374666378_0006)

-----
VERTICES      MODE      STATUS TOTAL COMPLETED RUNNING PENDING FAILED KILLED
-----
Map 1 ..... container  SUCCEEDED 1      1      0      0      0      0
Reducer 2 ..... container  SUCCEEDED 1      1      0      0      0      0
-----
VERTICES: 02/02 [=====>>>] 100% ELAPSED TIME: 25.50 s
-----

OK
Android 855
Linux 813
MacOS 852
OSX 799
Windows 883
iOS 794
Time taken: 32.262 seconds, Fetched: 6 row(s)
```


✕

Amazon EMR Hadoop Hive

localhost

Server:

Port:

Enter information to sign in to the server:

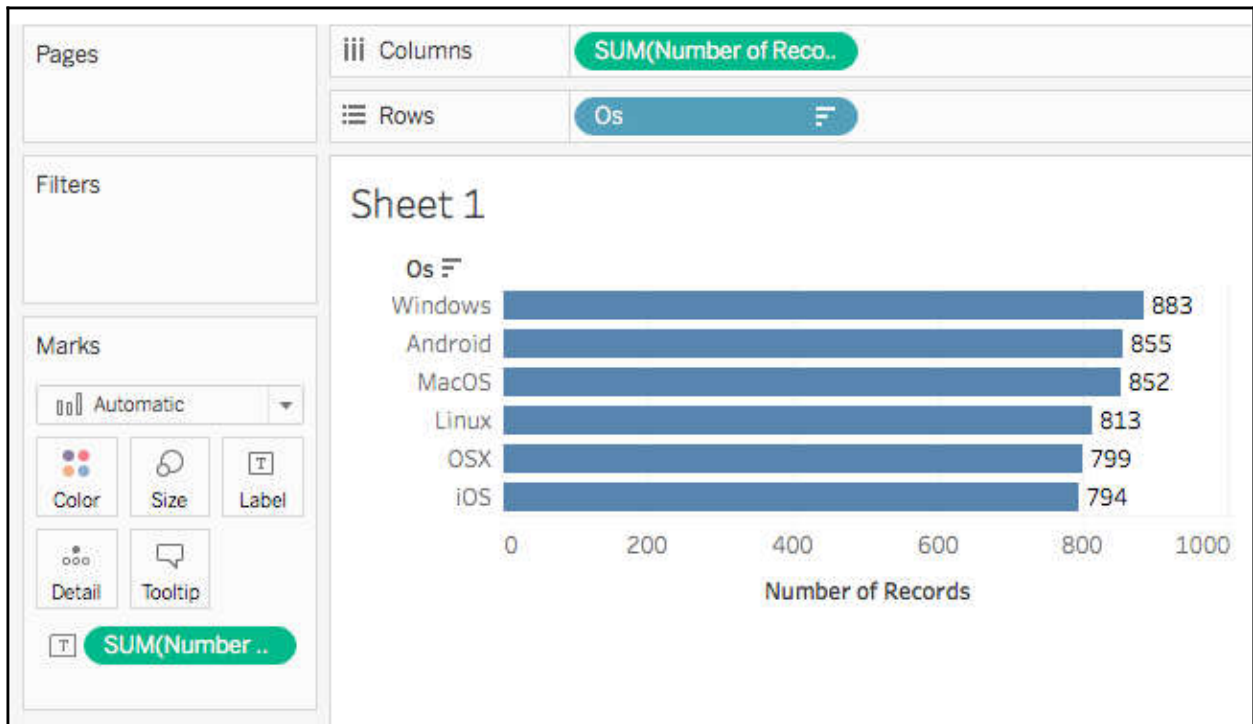
Authentication:

Transport:

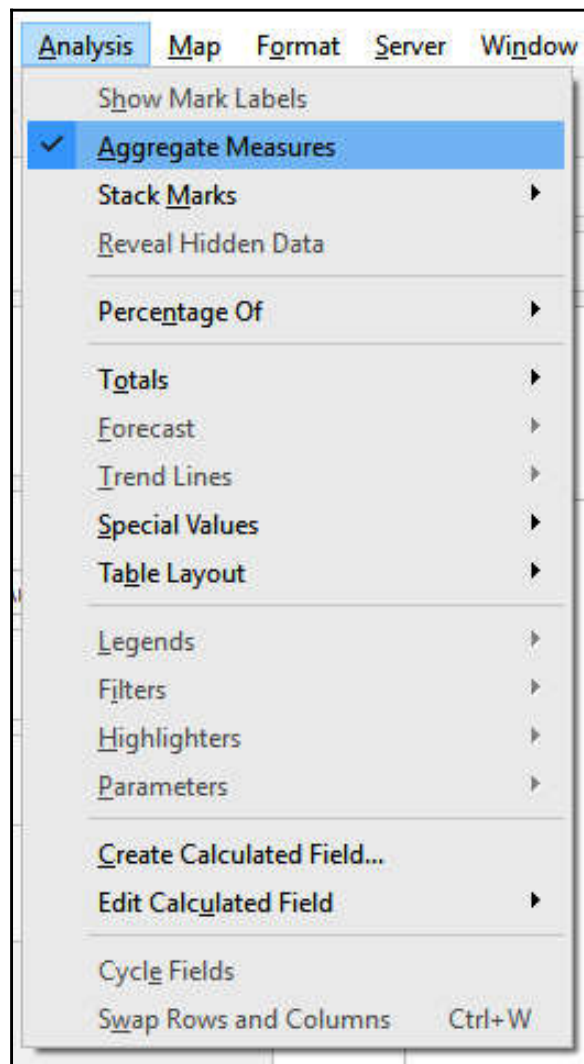
Username:

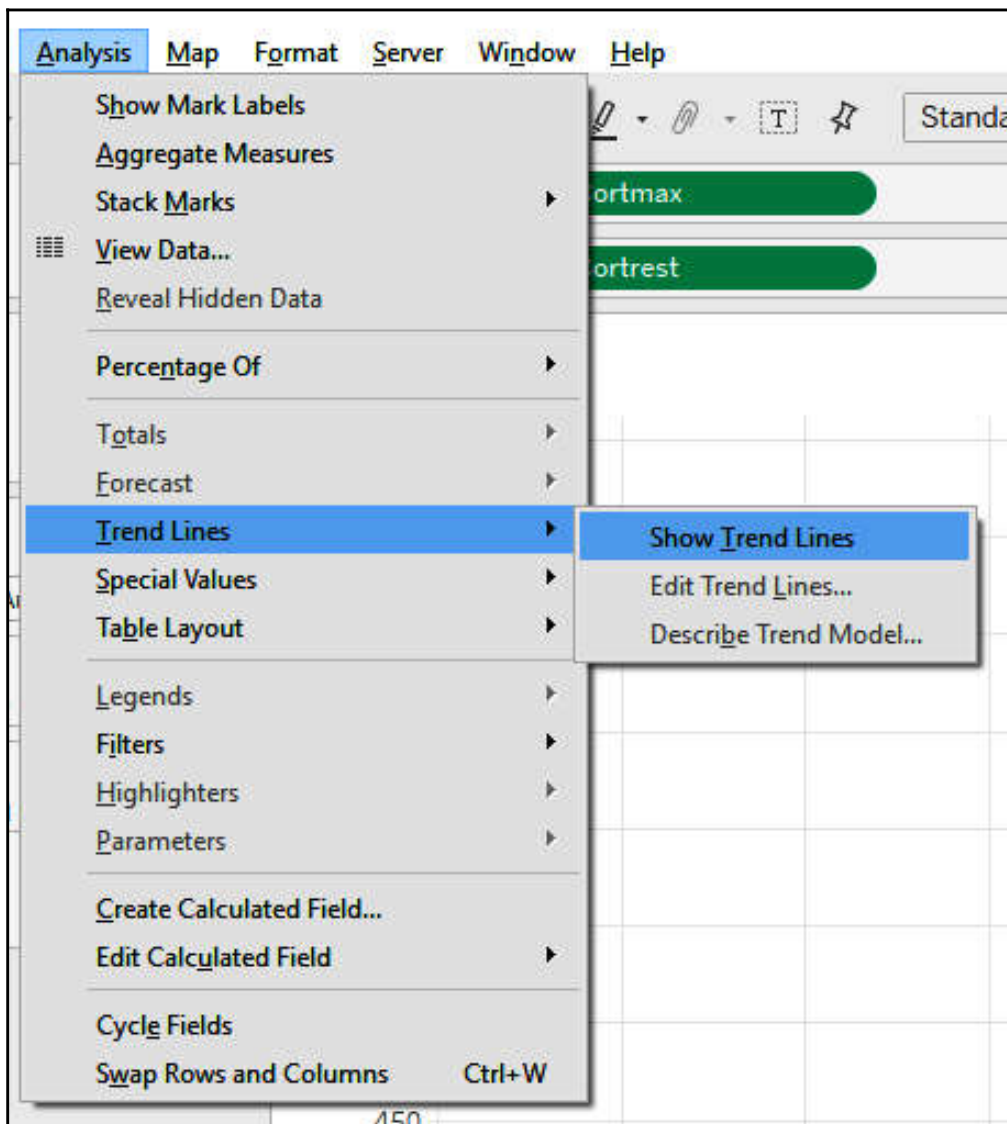
Require SSL

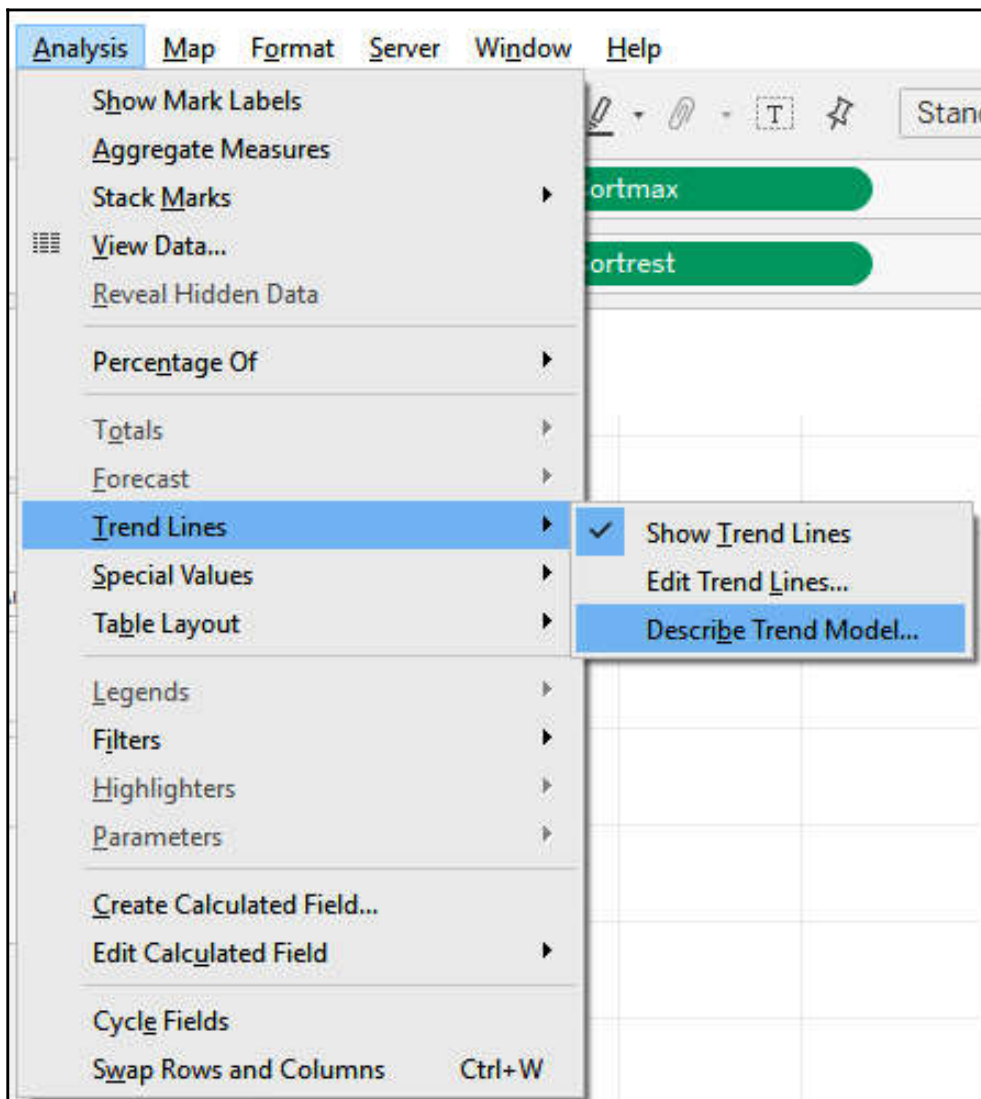
[Initial SQL...](#)

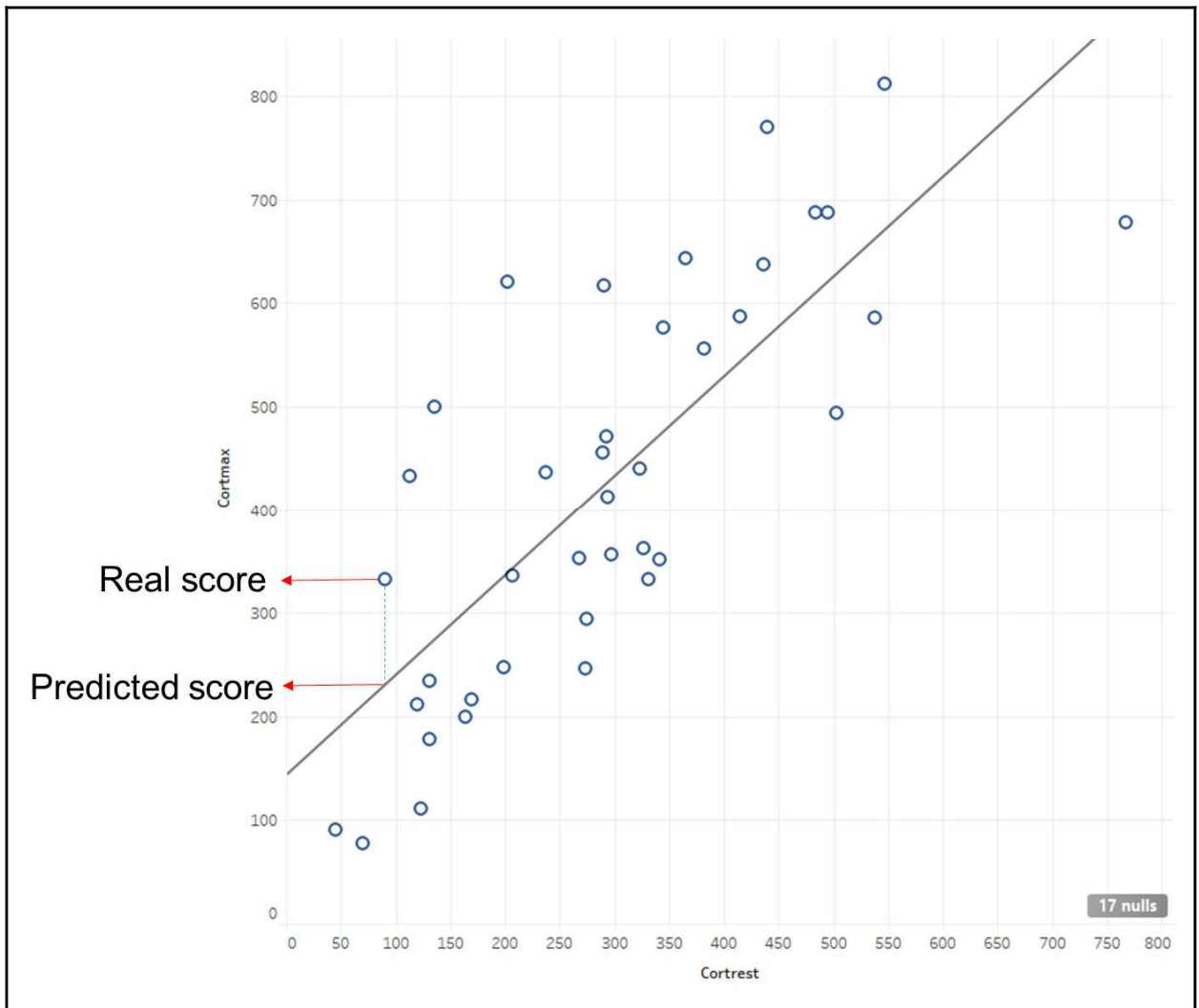


Chapter 11: Forecasting with Tableau









Describe Trend Model



Trend Lines Model

A linear trend model is computed for Cortmax given Cortrest. The model may be significant at $p \leq 0.05$.

Model formula: (Cortrest + intercept)
Number of modeled observations: 39
Number of filtered observations: 17
Model degrees of freedom: 2
Residual degrees of freedom (DF): 37
SSE (sum squared error): 573484
MSE (mean squared error): 15499.6
R-Squared: 0.601255
Standard error: 124.497
p-value (significance): < 0.0001

Individual trend lines:

Panels		Line		Coefficients				
Row	Column	p-value	DF	Term	Value	StdErr	t-value	p-value
Cortmax	Cortrest	< 0.0001	37	Cortrest	0.964381	0.129112	7.46935	< 0.0001
				intercept	143.28	42.8355	3.34489	0.0018966

Copy

Close

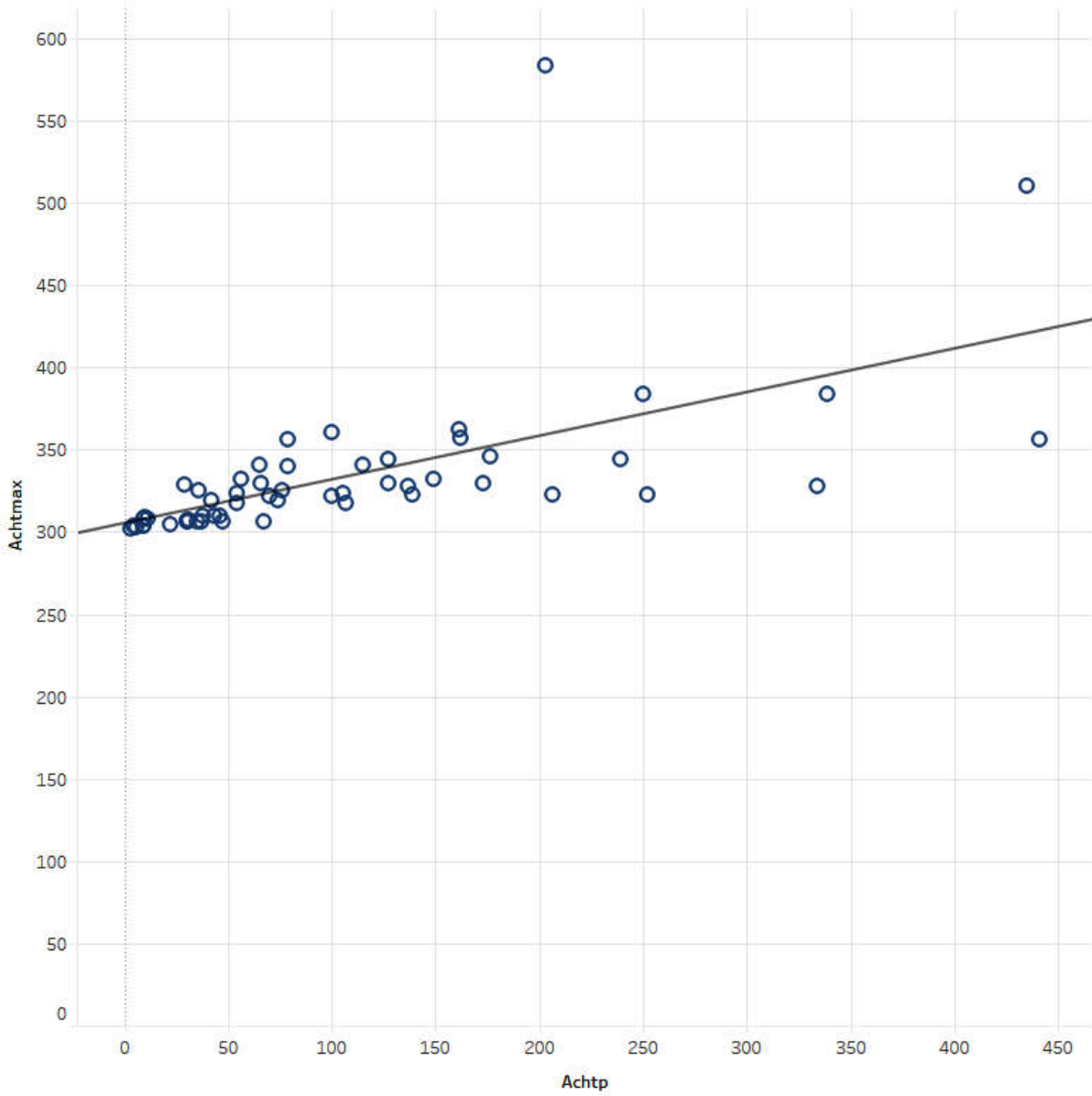
Columns

Achtp

Rows

Achtmax

Sheet 2






Average ✕

`WINDOW_AVG (SUM ([Achtmax]))`

Default Table Calculation

The calculation is valid.

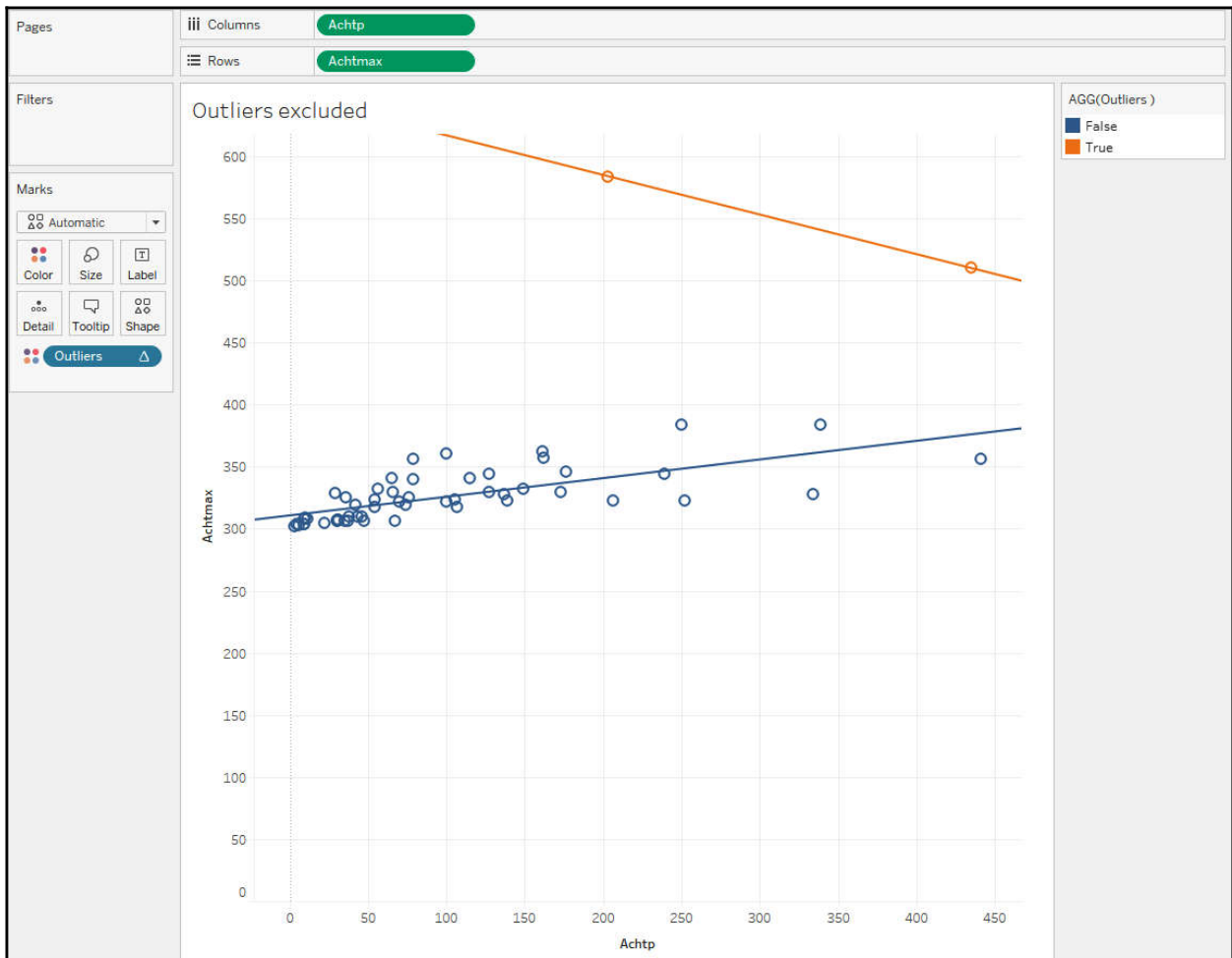
-  New Worksheet
-  New Dashboard
-  New Story

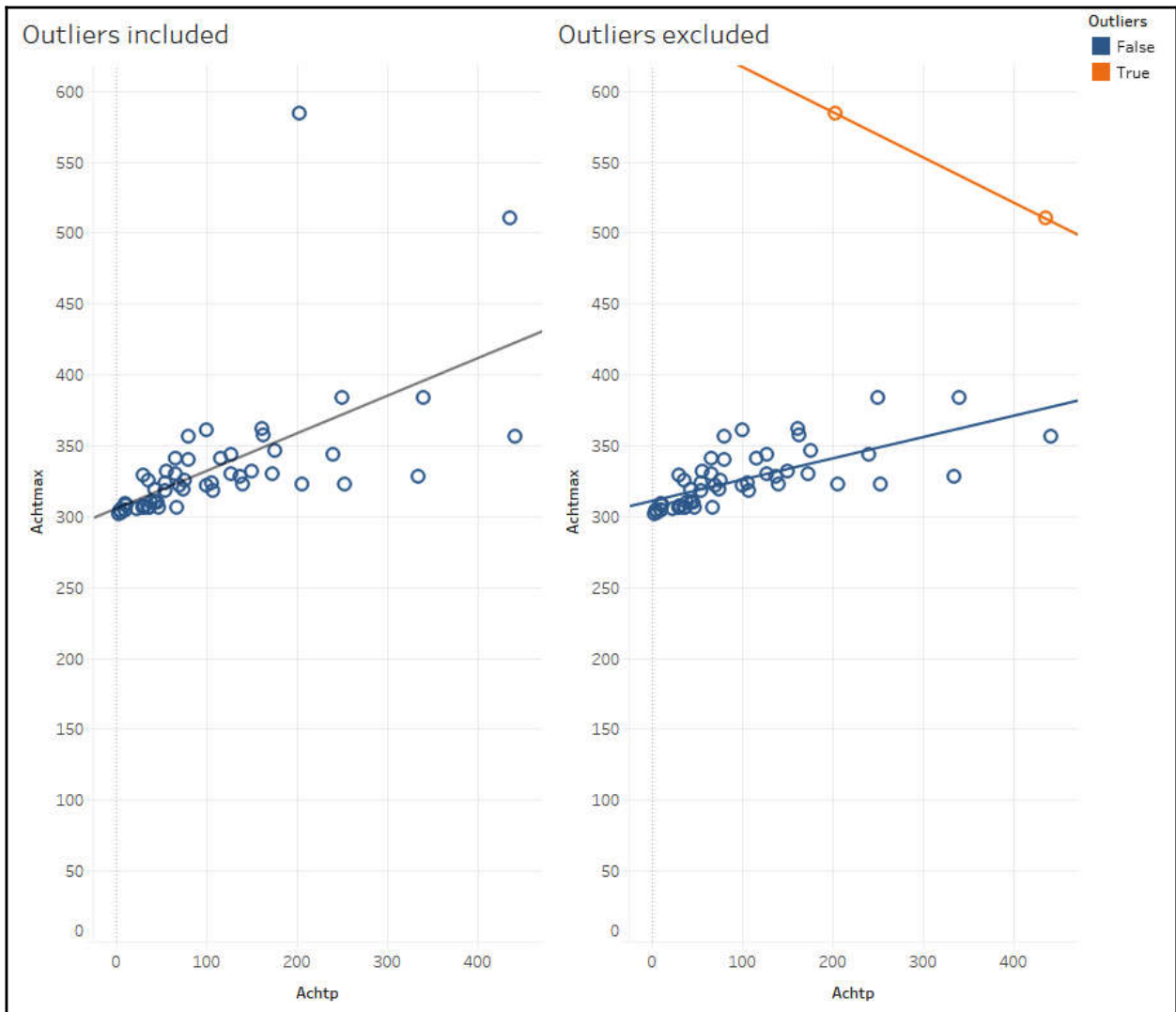
- Copy
- Paste
- Rename Sheet
- Delete

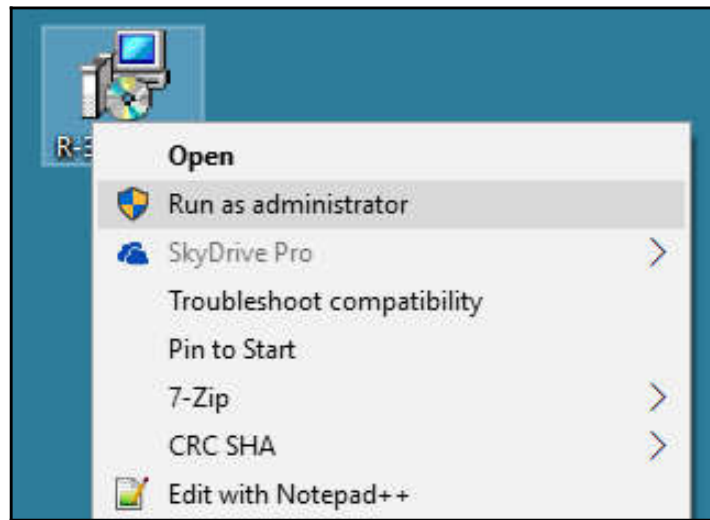
- Duplicate**
- Duplicate as Crosstab
- Export...

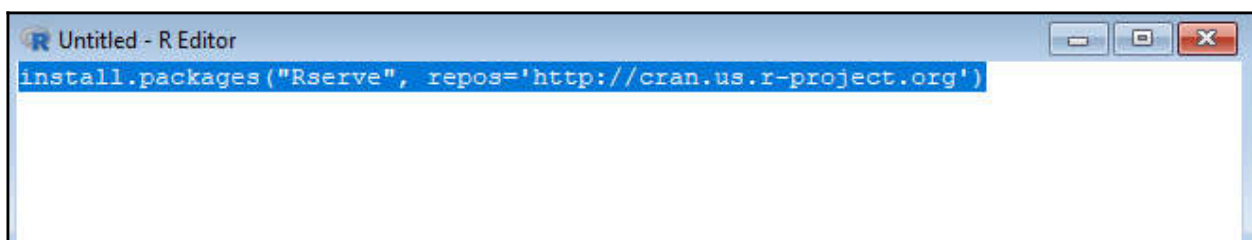
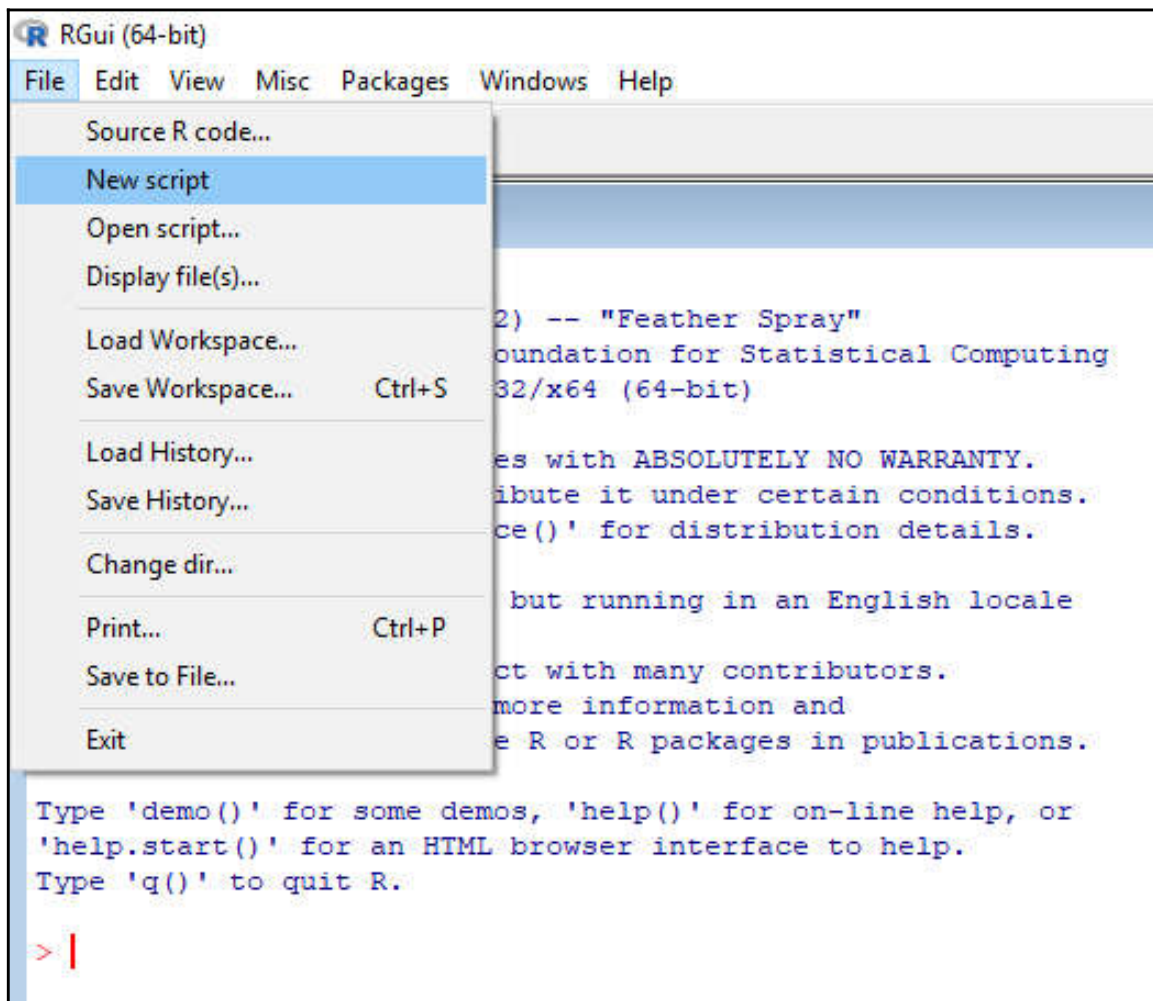
- Copy Formatting
- Paste Formatting

- Color ▶







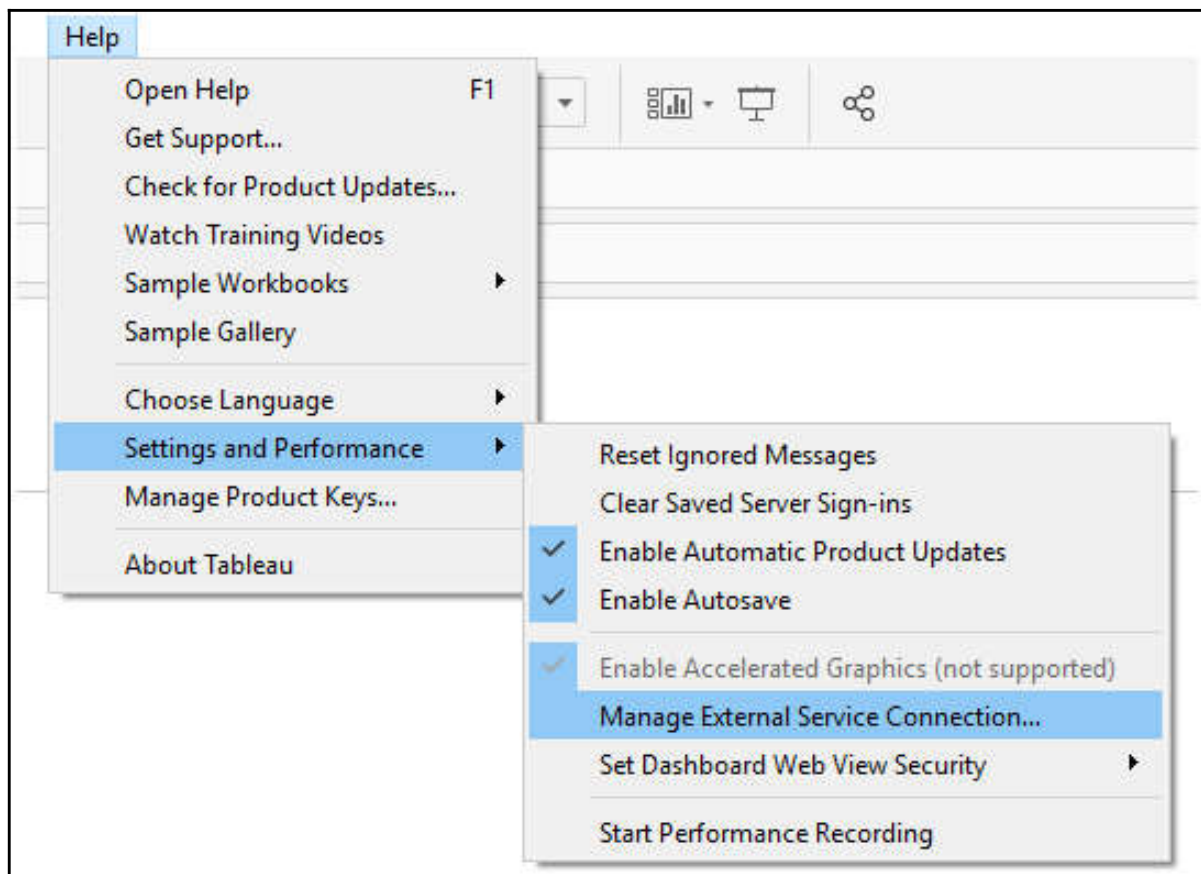


```
Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> install.packages("Rserve", repos='http://cran.us.r-project.org')
Installing package into 'C:/Users/Slaven/Documents/R/win-library/3.5'
(as 'lib' is unspecified)
trying URL 'http://cran.us.r-project.org/bin/windows/contrib/3.5/Rserve_1.7-3.zip'
Content type 'application/zip' length 638205 bytes (623 KB)
downloaded 623 KB

package 'Rserve' successfully unpacked and MD5 sums checked

The downloaded binary packages are in
  C:\Users\Slaven\AppData\Local\Temp\Rtmps3yCfk\downloaded_packages
> |
```



External Service Connection

Specify a server name and a port

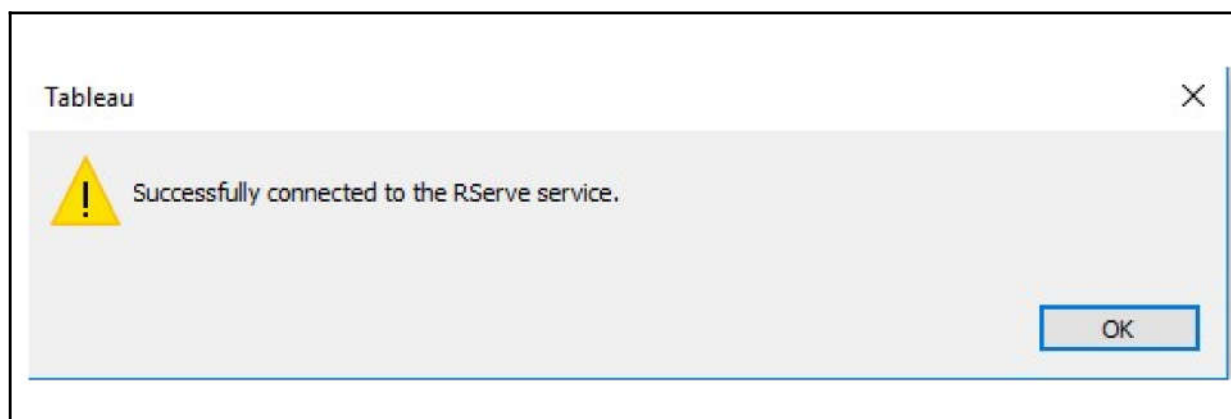
Server: localhost Port: 6311

Sign in with a username and password

Username:

Password:

Test Connection OK Cancel



CortmaxPred

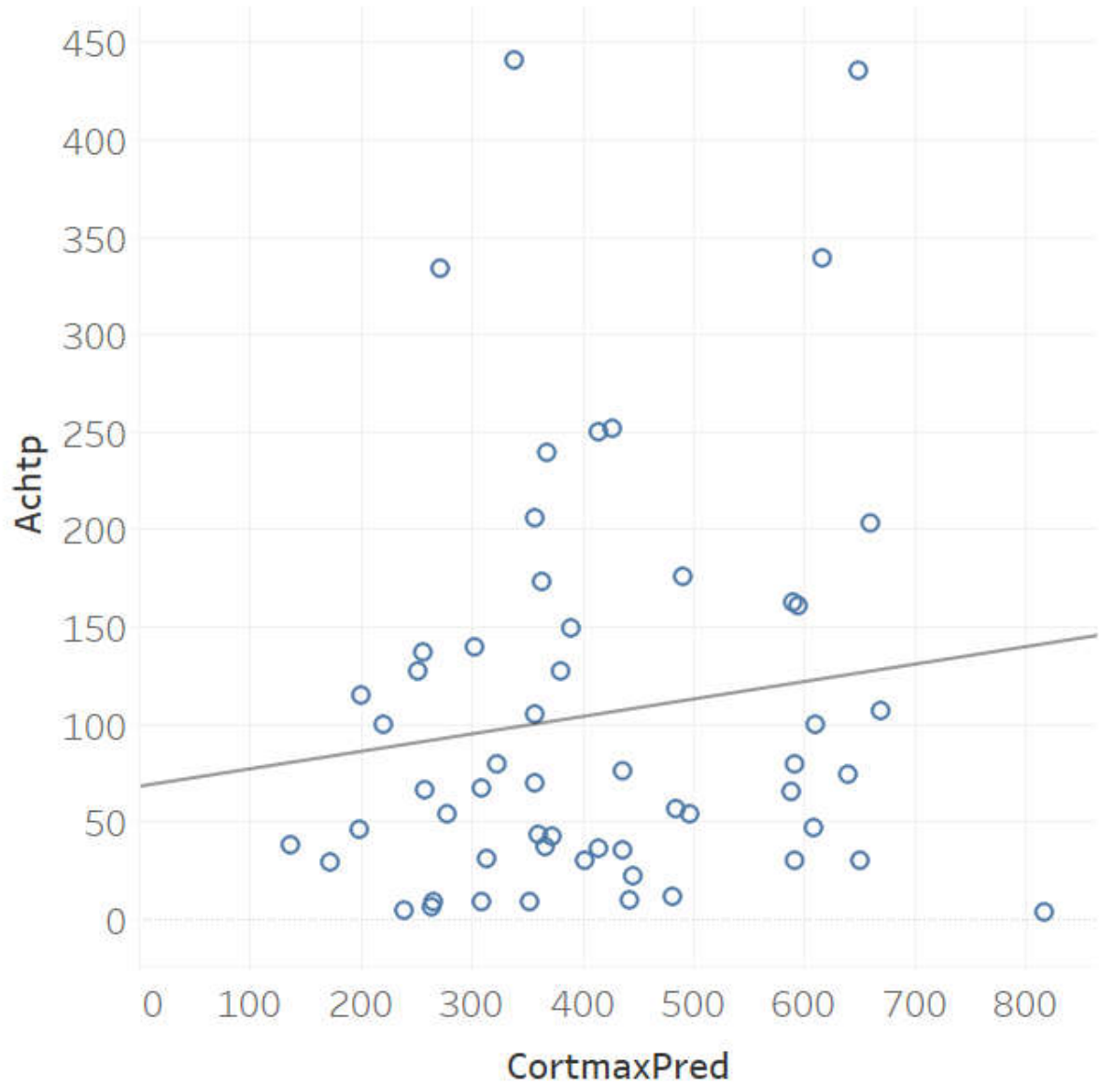
Results are computed along Table (across).

```
SCRIPT_REAL (
,
mydata <- data.frame(y=.arg1, x1=.arg2, x2=.arg3);
reg <- lm(y ~ x1 + x2, data = mydata);
save(reg, file = "C:/Users/Slaven/Documents/mymodel.rda")
prob <- predict(reg, newdata = mydata, type = "response")'
,
AVG([Cortmax]),AVG([Cortrest]), AVG([Cortp]))|
```

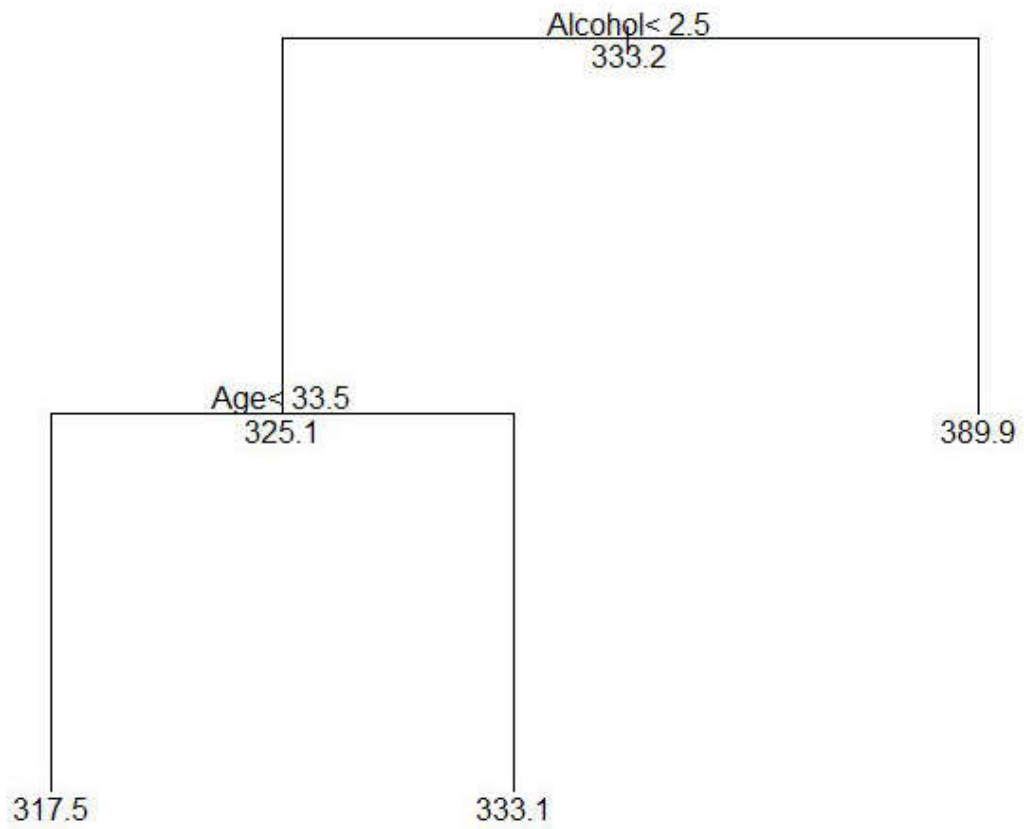
Columns CortmaxPred

Rows Achtp

Sheet 2



Prediction of maximum ACHT level



Random Forest
✕

Results are computed along Table (across).

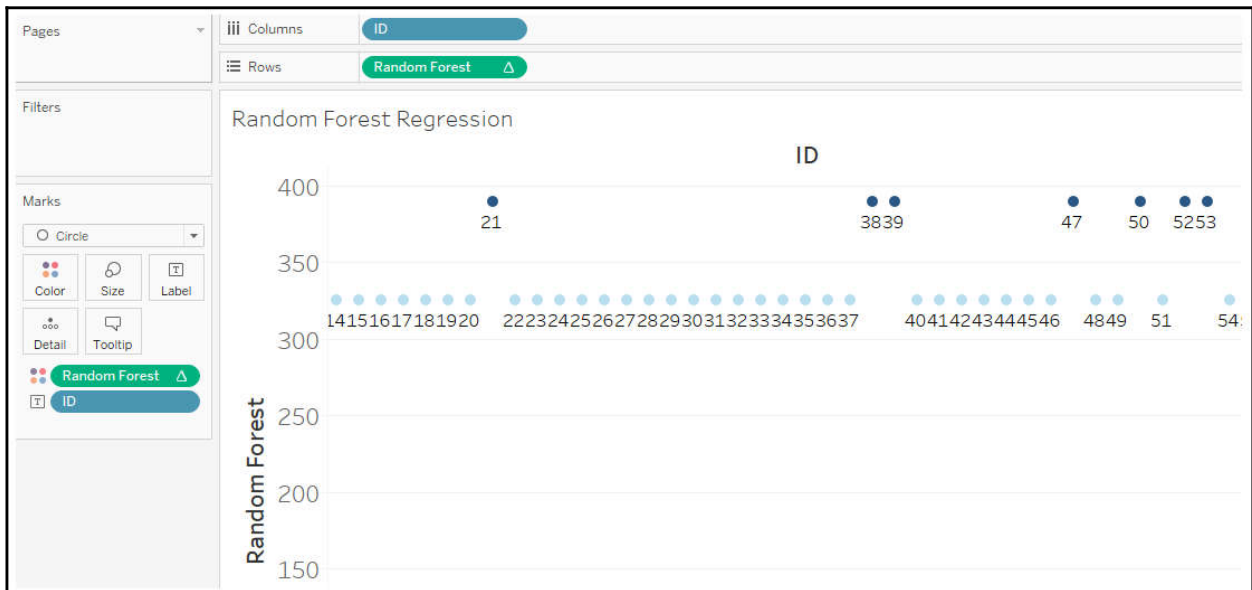
```

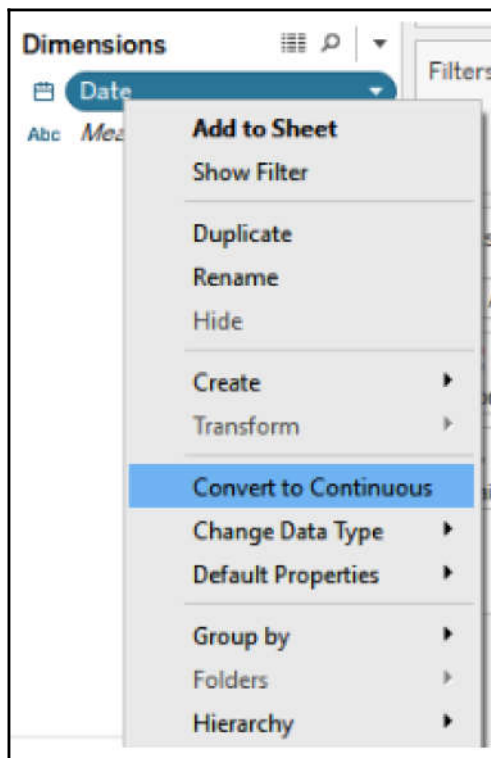
SCRIPT_REAL('library(rpart);
fit = rpart(Achtmax ~ Cortrest + Alcohol + Tobacco + Height + Age + Weight,
method="anova", data.frame(Achtmax = .arg1, Cortrest = .arg2, Alcohol=.arg3, Tobacco
t(data.frame(predict(prune(fit,0.05), type = "vector")))[1,]'),
AVG([Achtmax]),
AVG([Cortrest]),
AVG([Alcohol]),
AVG([Tobacco]),
AVG([Height]),
AVG([Age]),
AVG([Weight]))

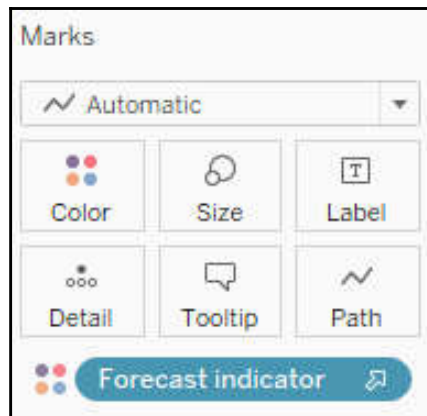
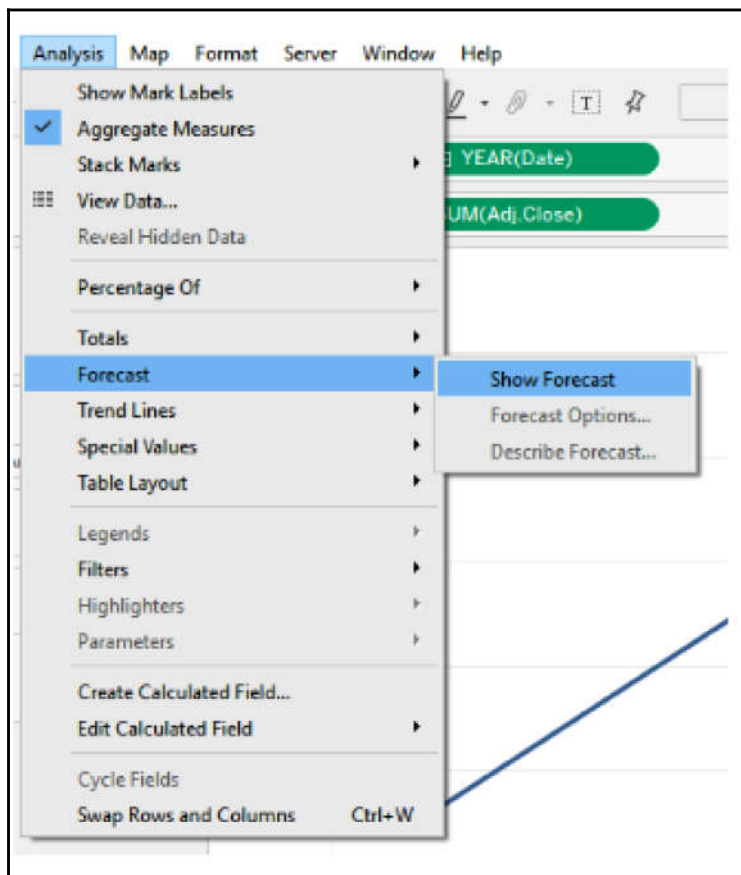
```

[Default Table Calculation](#)

The calculation is valid.







Forecast Options ✕

Forecast Length

Automatic Next 5 quarters

Exactly

Until

Source Data

Aggregate by:

Ignore last: Quarters

Fill in missing values with zeroes

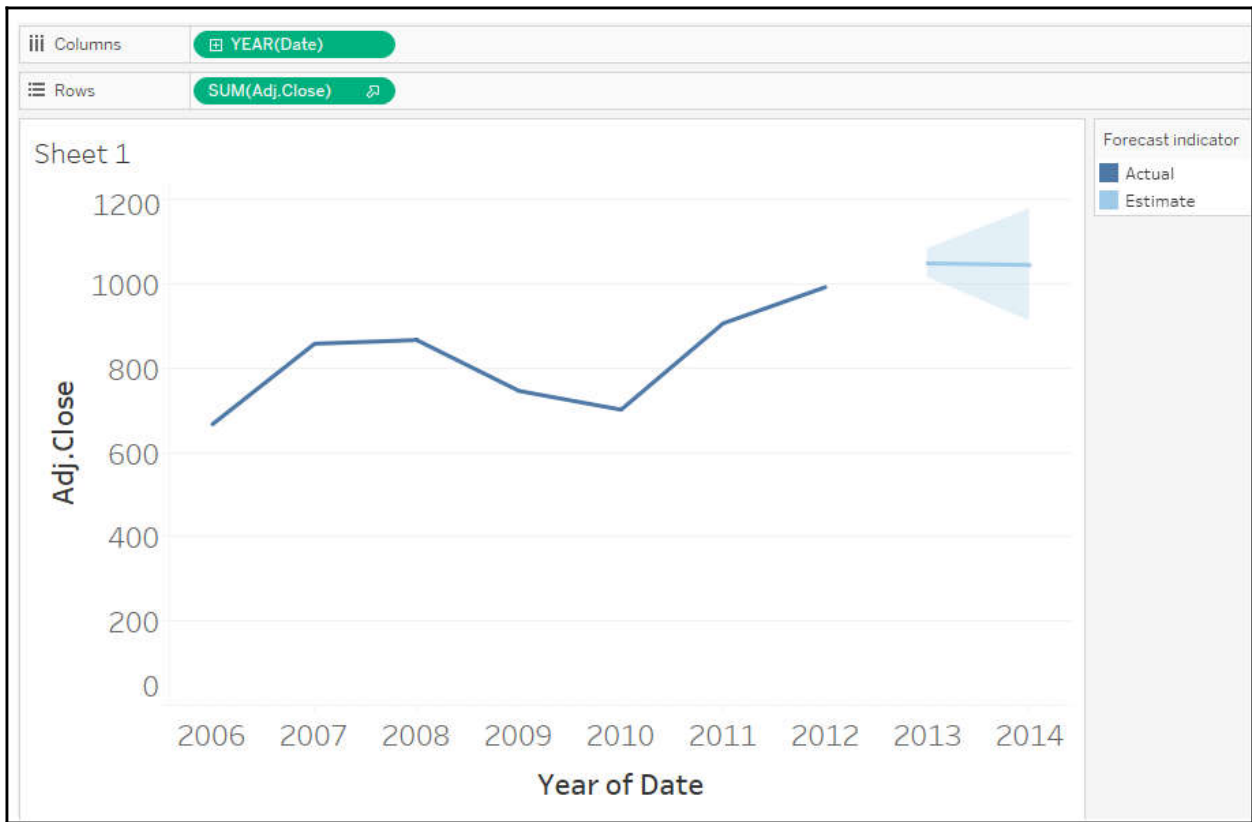
Forecast Model

Automatically selects an exponential smoothing model for data that may have a trend and may have a seasonal pattern.

Show prediction intervals

Currently using source data from Q1 2006 to Q3 2013 to create a forecast through Q4 2014. Looking for potential seasonal patterns every 4 Quarters.

[Learn more about forecast options](#)



Describe Forecast ✕

Summary **Models**

Options Used to Create Forecasts

Time series: Year of Date
 Measures: Sum of Adj.Close
 Forecast forward: 5 quarters (Q4 2013 – Q4 2014)
 Forecast based on: Q1 2006 – Q3 2013
 Ignore last: 1 quarter (Q4 2013)
 Seasonal pattern: None (Not enough data to search for a seasonal pattern recurring every 4 Quarters)

Sum of Adj.Close

Initial Q4 2013	Change From Initial Q4 2013 – Q4 2014	Seasonal Effect		Contribution		Quality
		High	Low	Trend	Season	
261.3 ± 36.6	0.0	None		0.0%	0.0%	Poor

Show values as percentages

Copy to Clipboard [Learn more about the forecast summary](#) Close

Describe Forecast ✕

Summary **Models**

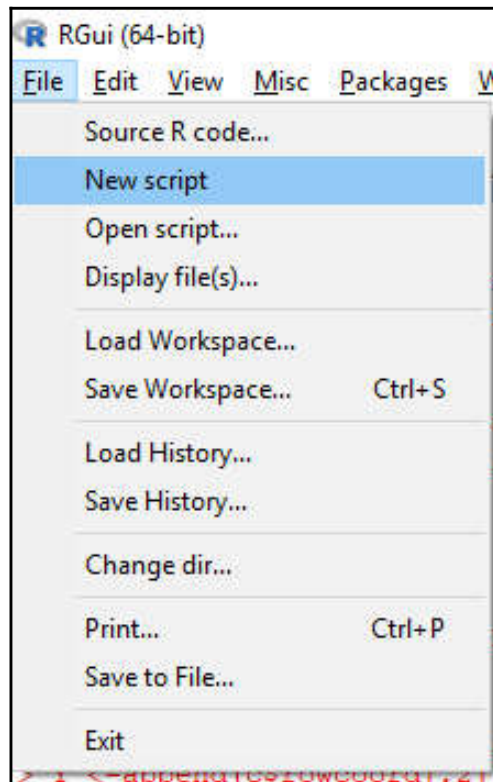
All forecasts were computed using exponential smoothing.

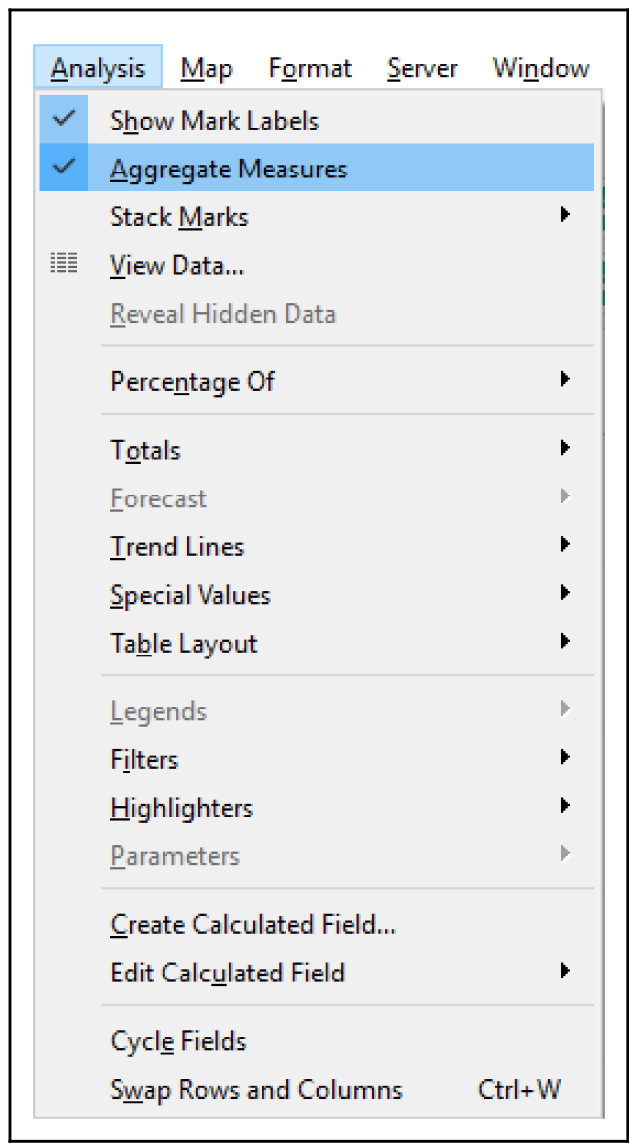
Sum of Adj.Close

Model			Quality Metrics					Smoothing Coefficients		
Level	Trend	Season	RMSE	MAE	MASE	MAPE	AIC	Alpha	Beta	Gamma
Additive	None	None	18.7	15.7	1.32	7.6%	188	0.500	0.000	0.000

Copy to Clipboard [Learn more about the forecast models](#) Close

Chapter 12: Advanced Analytics with Tableau





Data

Analytics



Summarize

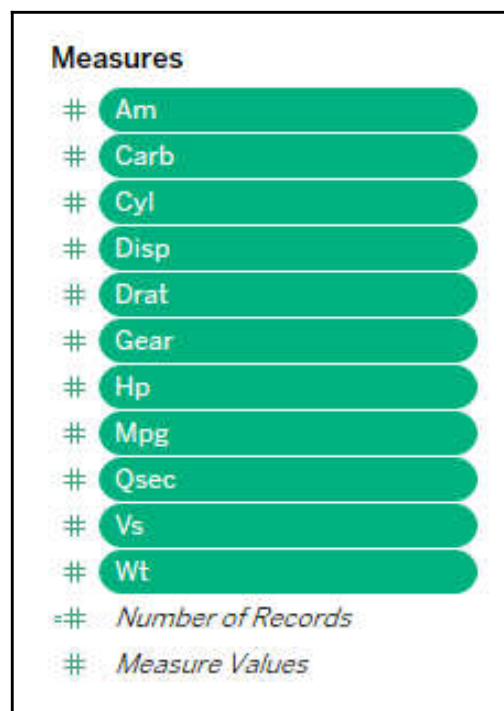
- Constant Line
- Average Line
- Median with Quartiles
- Box Plot
- Totals

Model

- Average with 95% CI
- Median with 95% CI
- Trend Line
- Forecast
- Cluster

Custom

- Reference Line
- Reference Band
- Distribution Band
- Box Plot



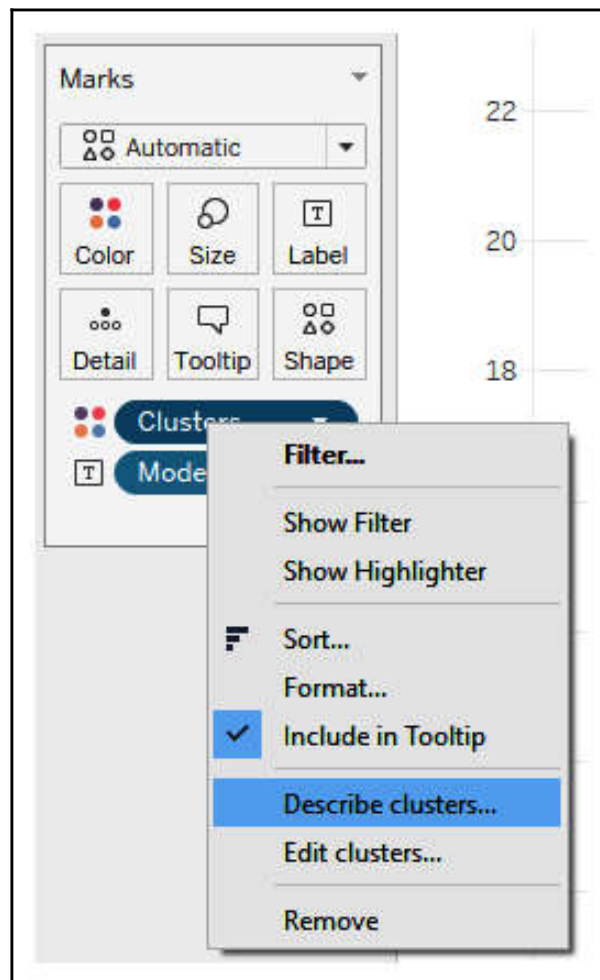
Clusters ✕

Variables

- Mpg
- Qsec
- Am
- Carb
- Cyl

Number of Clusters

Automatic



Describe Clusters



Summary

Models

Inputs for Clustering

Variables: Sum of Mpg
Sum of Qsec
Sum of Am
Sum of Carb
Sum of Cyl
Sum of Disp
Sum of Drat
Sum of Gear
Sum of Hp
Sum of Mpg
Sum of Qsec
Sum of Vs
Sum of Wt

Level of Detail: Model

Scaling: Normalized

Summary Diagnostics

Number of Clusters: 2

Show scaled centers

Copy to Clipboard

[Learn more about the cluster summary statistics](#)

Close

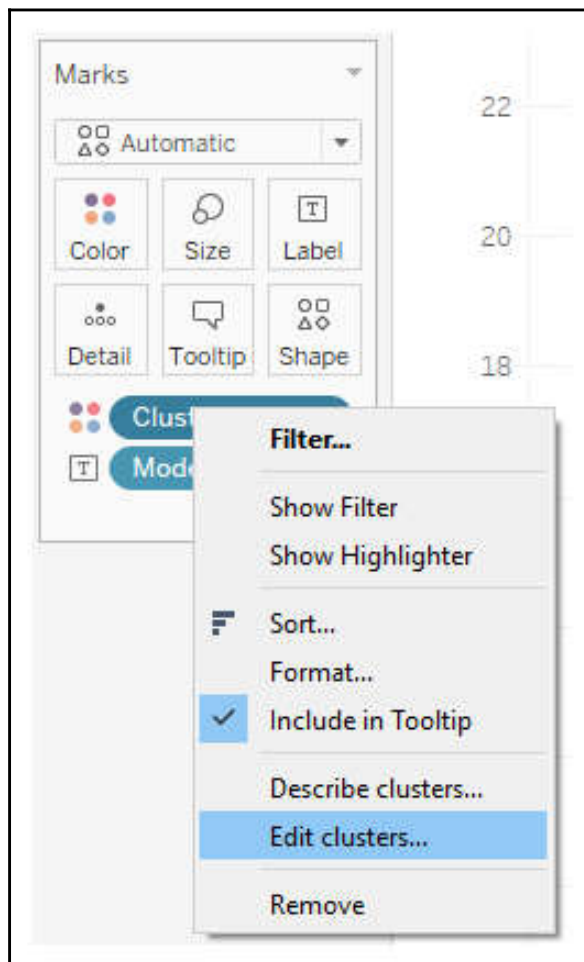
Analysis of Variance:

Variable	F-statistic	p-value	Model		Error	
			Sum of Squares	DF	Sum of Squares	DF
Sum of Vs	26.44	1.558e-05	6.942	1	7.875	30
Sum of Cyl	23.44	3.642e-05	4.829	1	6.18	30
Sum of Hp	17.81	0.0002078	1.08	1	1.82	30
Sum of Disp	17.46	0.0002332	1.724	1	2.963	30
Sum of Mpg	15.66	0.0004293	1.064	1	2.039	30
Sum of Mpg	15.66	0.0004293	1.064	1	2.039	30
Sum of Qsec	14.67	0.0006081	0.6859	1	1.403	30
Sum of Qsec	14.67	0.0006081	0.6859	1	1.403	30
Sum of Wt	11.59	0.001898	0.7499	1	1.94	30
Sum of Carb	10.74	0.002655	0.5907	1	1.651	30
Sum of Drat	8.646	0.006257	0.5424	1	1.882	30
Sum of Gear	3.034	0.09181	0.4266	1	4.219	30
Sum of Am	1.772	0.1931	0.456	1	7.719	30

Copy to Clipboard

[Learn more about the cluster model statistics](#)

Close

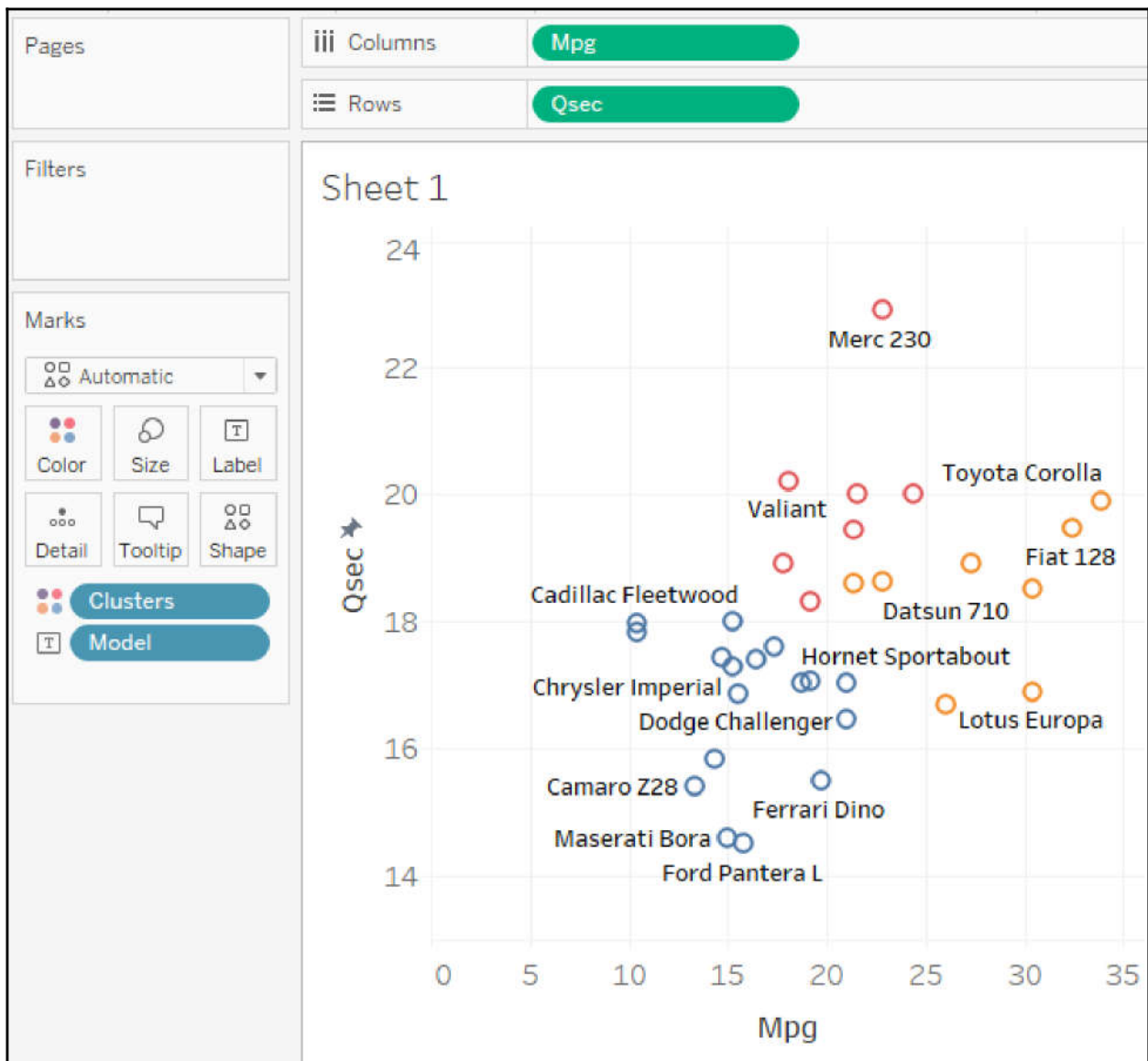


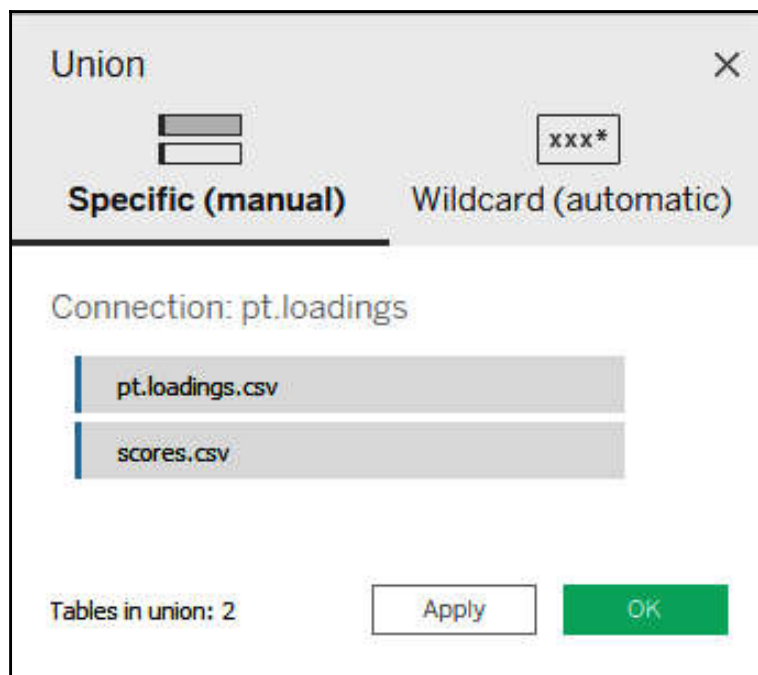
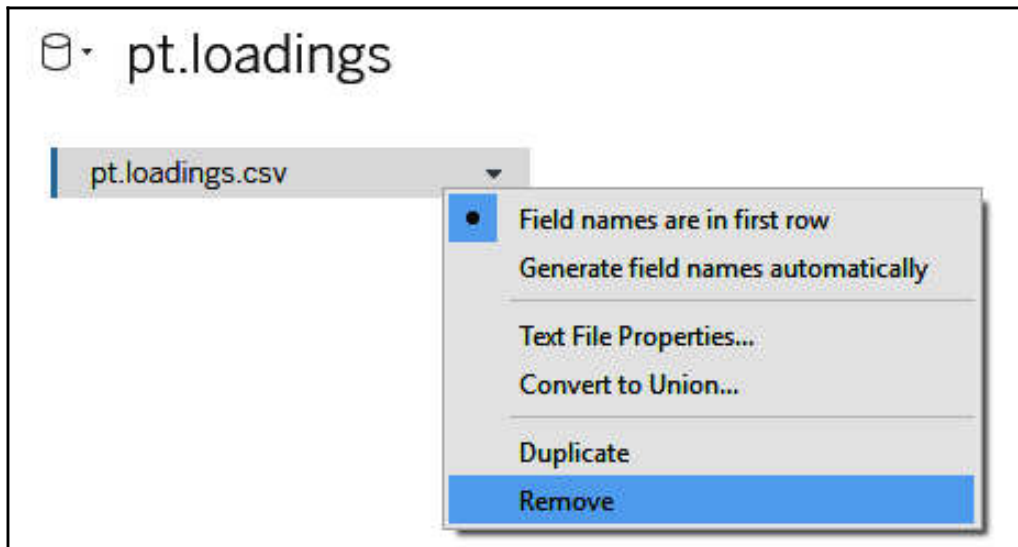
Clusters ✕

Variables

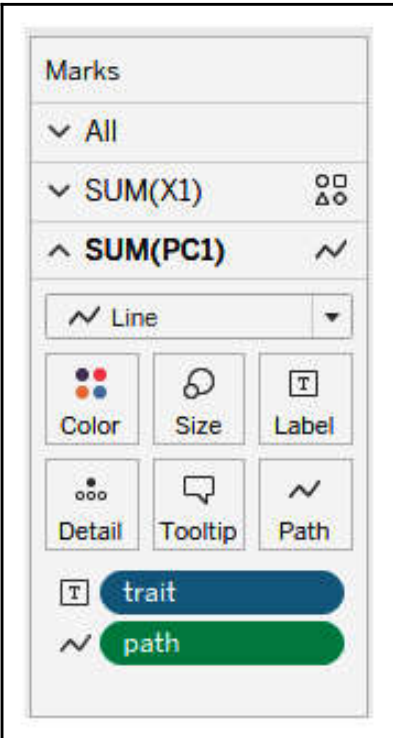
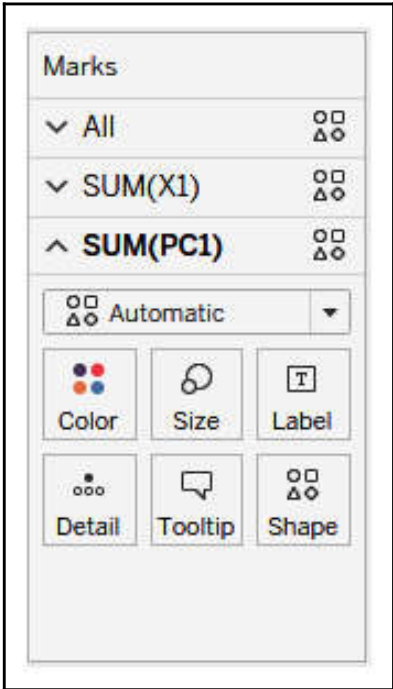
- Mpg
- Qsec
- Am
- Carb
- Cyl

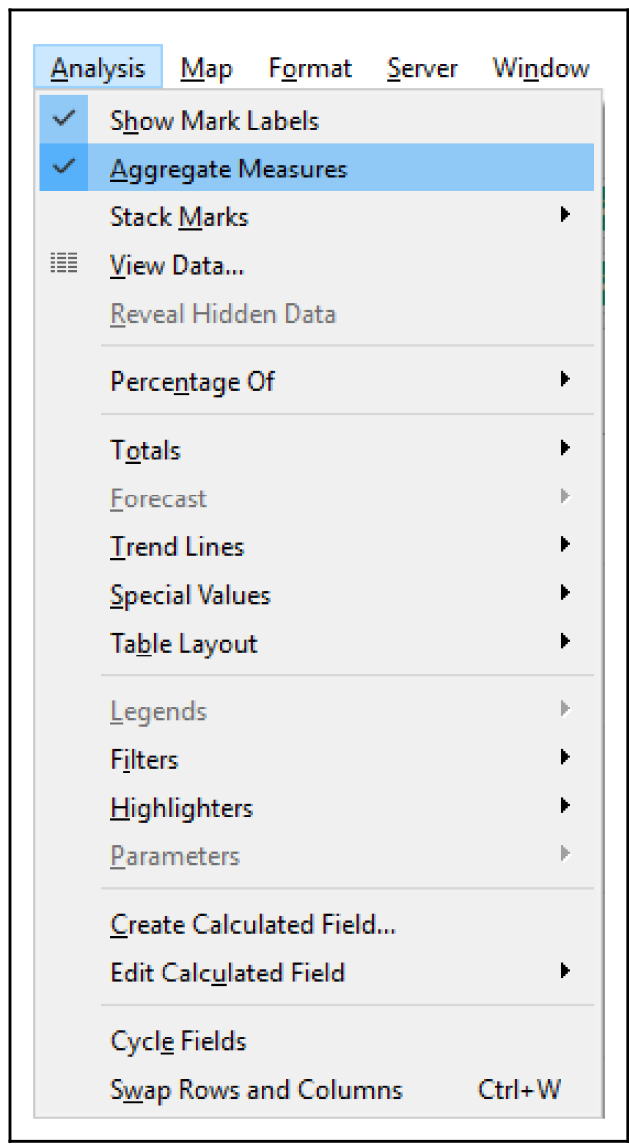
Number of Clusters

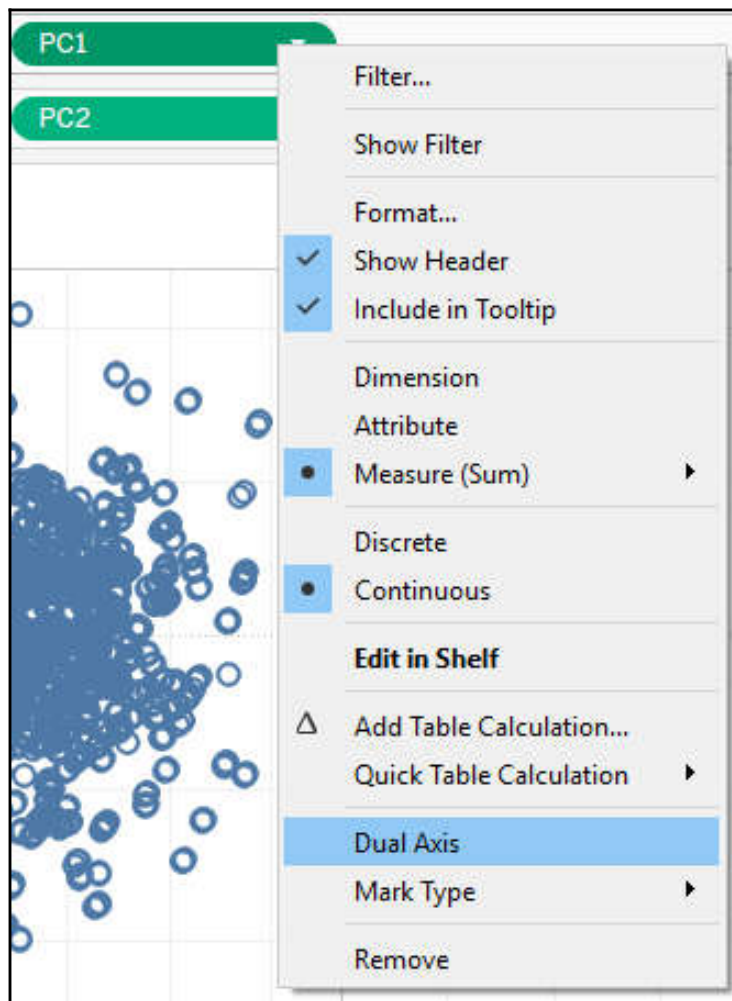




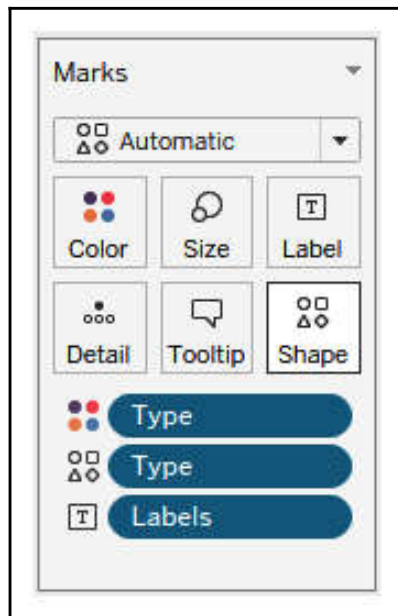
Columns	SUM(X1)	SUM(PC1)
Rows	SUM(X2)	SUM(PC2)

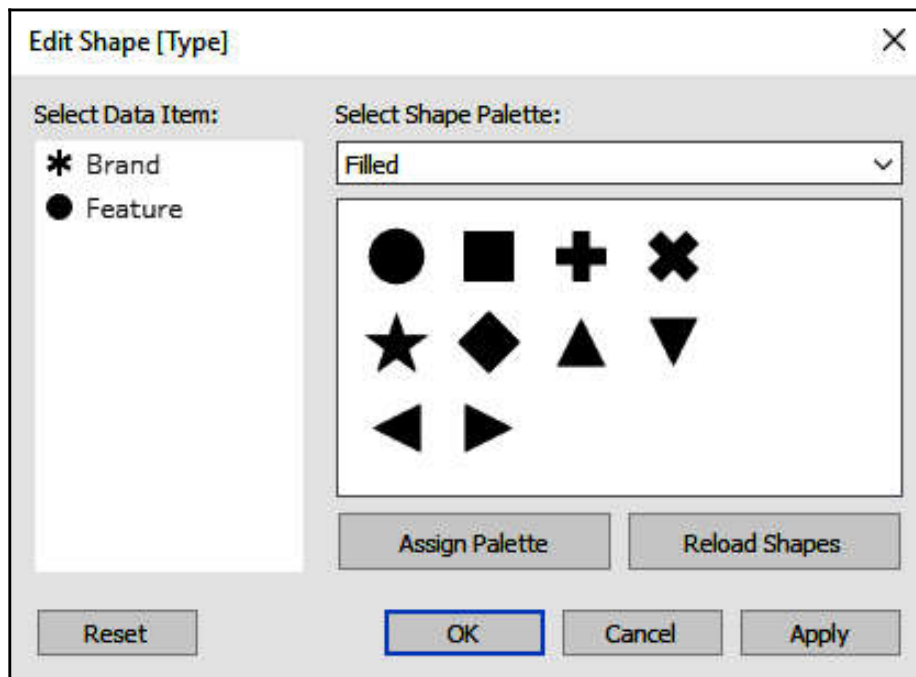


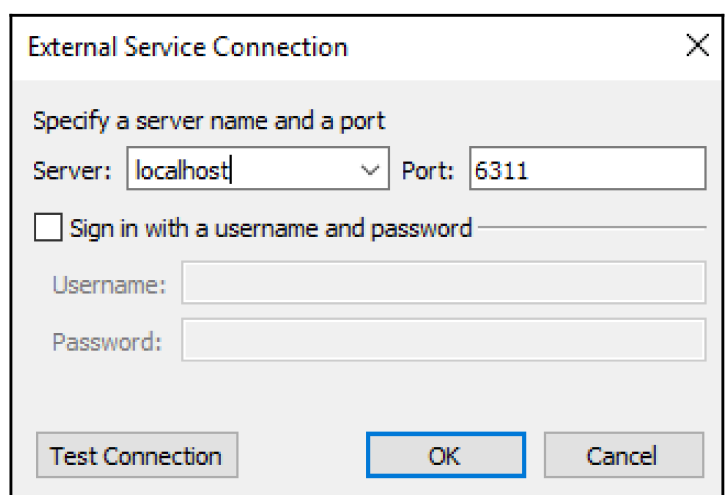
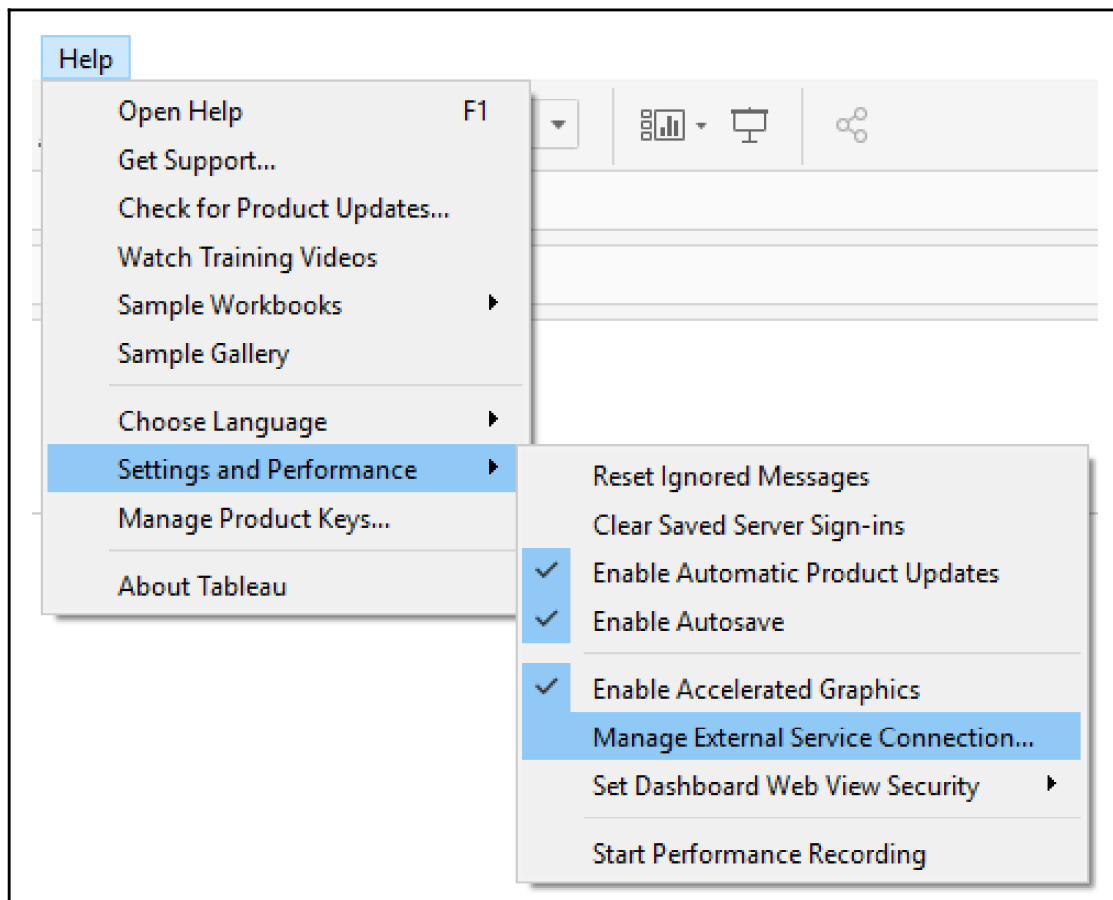


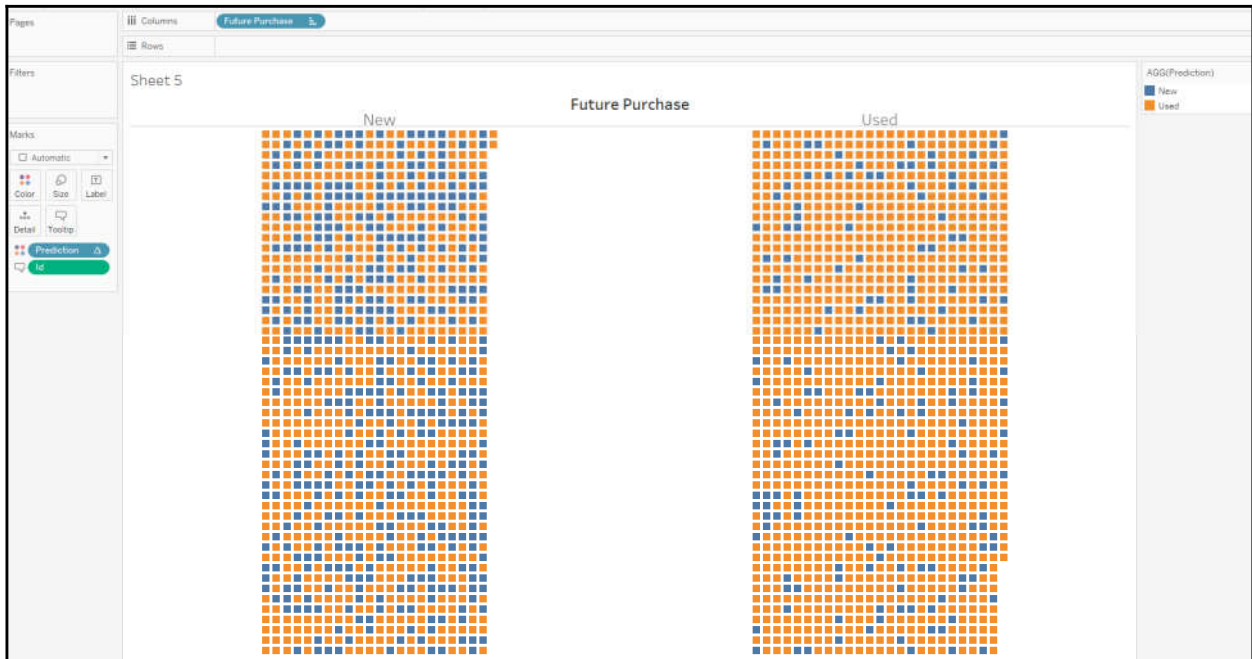
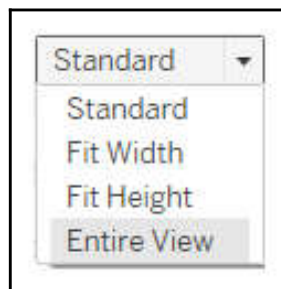
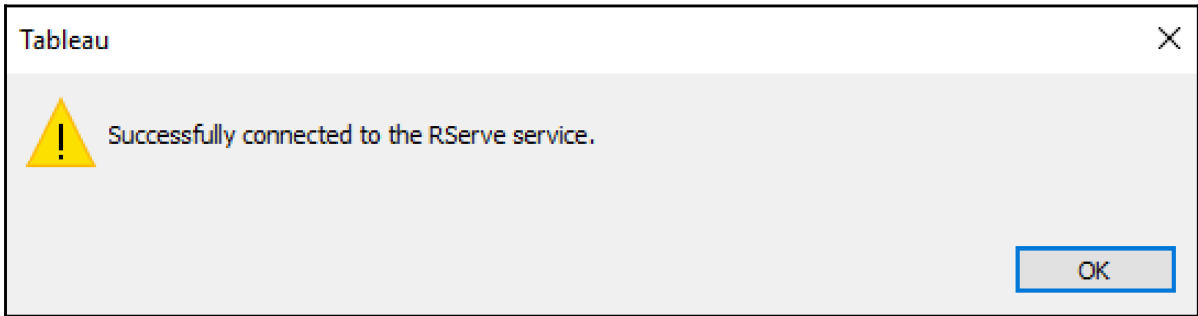


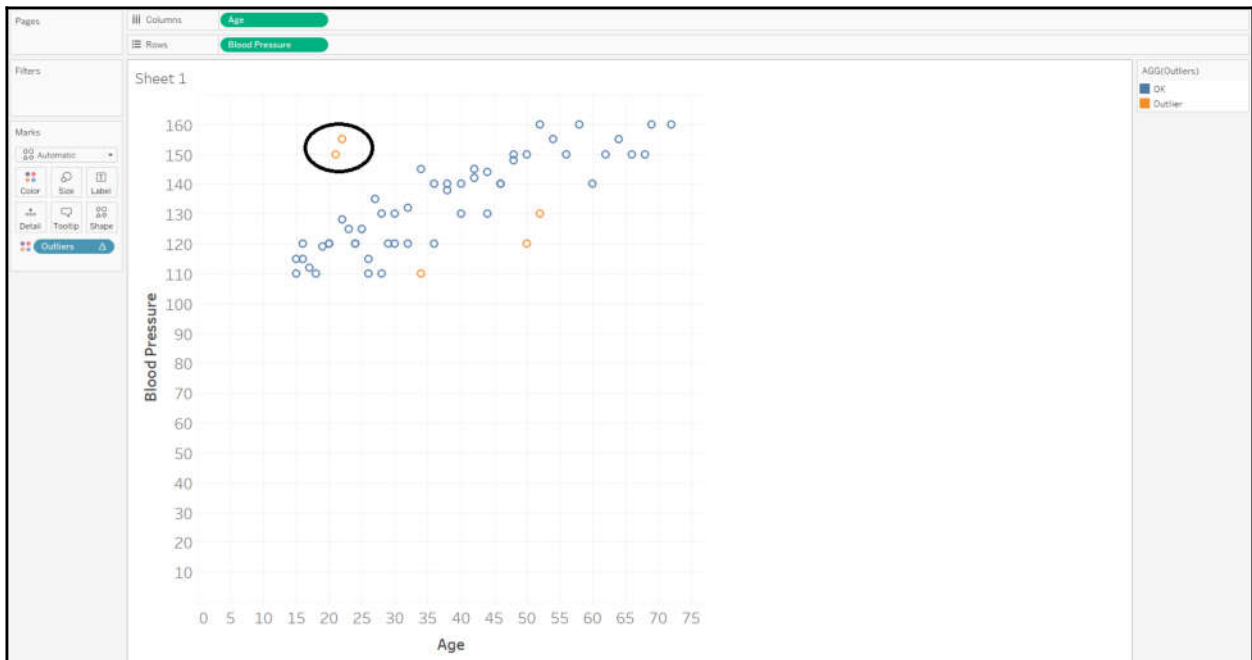
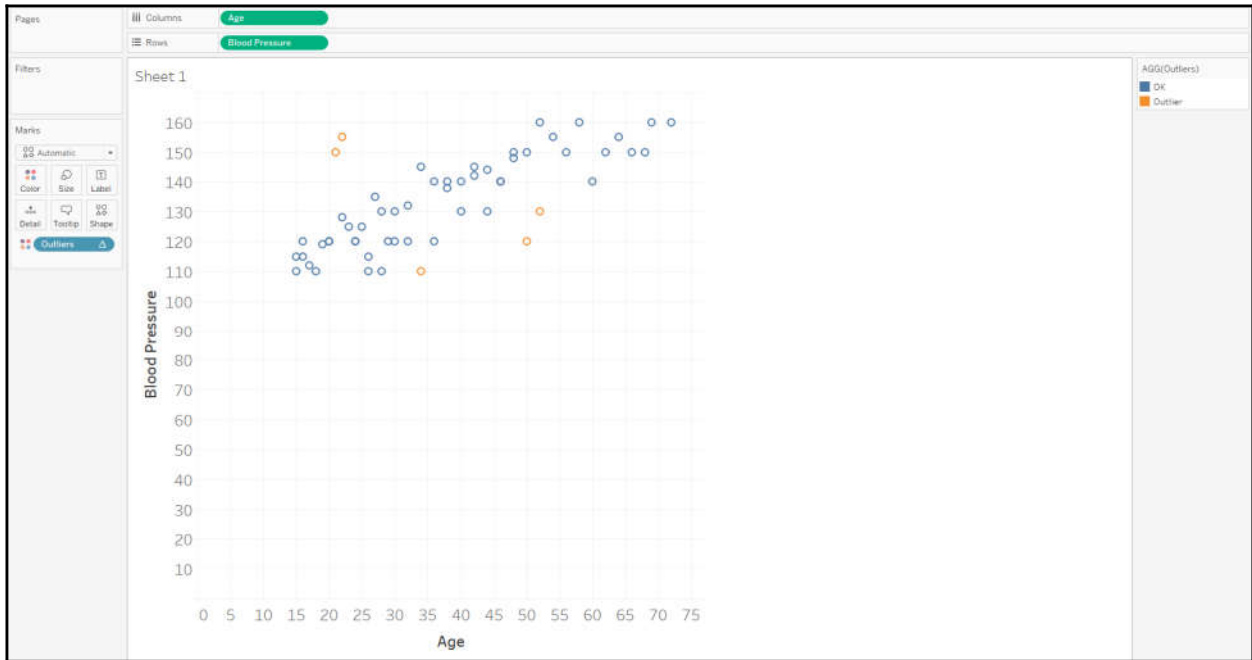




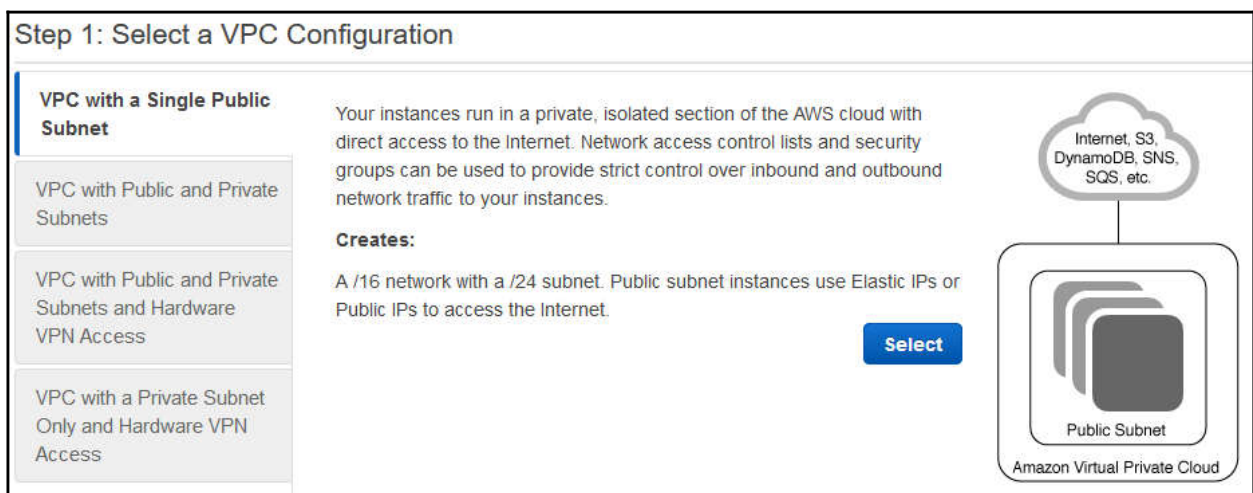
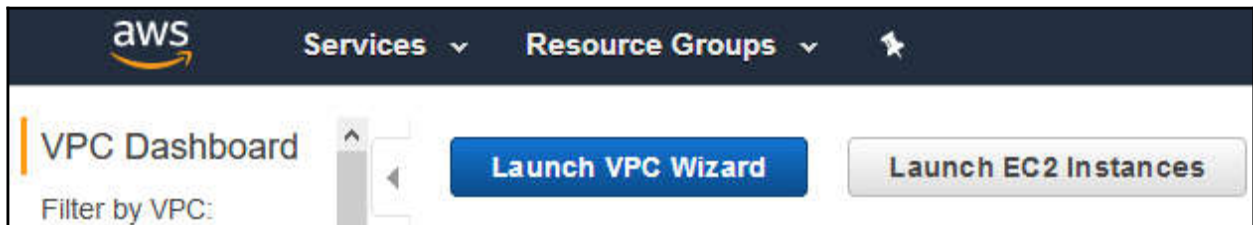








Chapter 13: Deploy Tableau Server



Step 2: VPC with a Single Public Subnet

IPv4 CIDR block:* (65531 IP addresses available)

IPv6 CIDR block: No IPv6 CIDR Block
 Amazon provided IPv6 CIDR block

VPC name:

Public subnet's IPv4 CIDR:* (251 IP addresses available)

Availability Zone:*

Subnet name:

You can add more subnets after AWS creates the VPC.

Service endpoints

Enable DNS hostnames:* Yes No

Hardware tenancy:*

VPC Successfully Created

Your VPC has been successfully created.

You can launch instances into the subnets of your VPC. For more information, see [Launching an Instance into Your Subnet](#).

Create Security Group

Security group name ⓘ

Description ⓘ

VPC ⓘ

Create Security Group

Security group name ⓘ

Description ⓘ

VPC ⓘ

Security group rules:

Inbound | Outbound

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ	Description ⓘ
<i>This security group has no rules</i>				

Add Rule

Create Security Group

Security group name ⓘ

Description ⓘ

VPC ⓘ

Security group rules:

Inbound | Outbound

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ	Description ⓘ	
HTTP	TCP	80	Custom	CIDR, IP or Security Group	inbound Http
HTTPS	TCP	443	Custom	CIDR, IP or Security Group	inbound Https
RDP	TCP	3389	Custom	CIDR, IP or Security Group	RDP


Add Rule

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Launch Instance

Note: Your instances will launch in the US East (Ohio) region




Microsoft Windows Server 2016 Base - ami-0aebcb5a7953a8fae

Windows Microsoft Windows 2016 Datacenter edition. [English]

Free tier eligible

Root device type: ebs Virtualization type: hvm

	General purpose	m5a.4xlarge	16	64
---	-----------------	-------------	----	----

[1. Choose AMI](#)
 [2. Choose Instance Type](#)
 [3. Configure Instance](#)
 [4. Add Storage](#)
 [5. Add Tags](#)
 [6. Configure Security Group](#)
 [7. Review](#)

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of

Number of instances ⓘ [Launch into Auto Scaling Group](#) ⓘ

Purchasing option ⓘ Request Spot instances

Network ⓘ ⓘ [Create new VPC](#)

Subnet ⓘ ⓘ [Create new subnet](#)
251 IP Addresses available

Auto-assign Public IP ⓘ

Placement group ⓘ Add instance to placement group

Capacity Reservation ⓘ ⓘ [Create new Capacity Reservation](#)

Domain join directory ⓘ ⓘ [Create new directory](#)

IAM role ⓘ ⓘ [Create new IAM role](#)

CPU options ⓘ Specify CPU options

Shutdown behavior ⓘ

Enable termination protection ⓘ Protect against accidental termination

Monitoring ⓘ Enable CloudWatch detailed monitoring
[Additional charges apply.](#)

EBS-optimized instance ⓘ Launch as EBS-optimized instance

1. Choose AMI 2. Choose instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MiBs)	Delete on Termination	Encrypted
Root	/dev/sda1	snap-0bf450dff21abf56	30	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted
EBS	nvdb	<input type="text" value="Search (case-insensit..."/>	100	General Purpose SSD (gp2)	300 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: Create a new security group
 Select an existing security group

Security Group ID	Name	Description
<input type="checkbox"/> sg-03fcb71dd2617629d	default	default VPC security group
<input checked="" type="checkbox"/> sg-083985694634c4334	my_security_group	default security group for Tableau Server

Inbound rules for sg-083985694634c4334 (Selected security groups: sg-083985694634c4334)

Type	Protocol	Port Range	Source
HTTP	TCP	80	
RDP	TCP	3389	
HTTPS	TCP	443	

Select an existing key pair or create a new key pair ✕


A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair ▼

Key pair name

Download Key Pair

 You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.


Cancel **Launch Instances**

i-06afe08ce9c03428d m5a.2xlarge us-east-2a

Instance: **i-06afe08ce9c03428d** Private IP: 10.0.0.211

Description Status Checks Monitoring **Copy to clipboard**

Instance ID	i-06afe08ce9c03428d
Instance state	running



Instance: **i-02e5001f7df9cabb8** Elastic IP: **54.144.74.211**

Description | Status Checks | Monitoring | Tags

Instance ID	i-02e5001f7df9cabb8	Public DNS (IPv4)	ec2-54-144-74-211.compute-1.amazonaws.com
Instance state	running	IPv4 Public IP	54.144.74.211
Instance type	m4.xlarge	IPv6 IPs	-
Elastic IPs	54.144.74.211*	Private DNS	ip-10-0-0-35.ec2.internal
Availability zone	us-east-1d	Private IPs	10.0.0.35
Security groups	Tabelau . view inbound rules . view outbound rules	Secondary private IPs	
Scheduled events	No scheduled events	VPC ID	vpc-06c8e084cb4155acb
AMI ID	RHEL-7.6_HVM_GA-20181017-x86_64-0-Hourly2-GP2 (ami-011b3ccf1bd6db744)	Subnet ID	subnet-06f7cfbf4474833f
Platform	-	Network interfaces	eth0
IAM role	-	Source/dest. check	True
Key pair name	tableaucookbook	T2/T3 Unlimited	-

Allocate new address | **Actions** ▾

🔍 Filter by tags and attributes or search by

Allocate new address | **Actions** ▲

🔍 Filter by tags and attributes or search by

Name ▾ | **Elastic IP**

- Release addresses
- Associate address**
- Disassociate address
- Add/Edit Tags

[Addresses](#) > Associate address

Associate address

Select the instance OR network interface to which you want to associate this Elastic IP address ()

Resource type Instance **i**
 Network interface

Instance i-06afe08ce9c03428d **C**

Private IP Select a private IP **C** **i**

Reassociation Allow Elastic IP to be reassociated if already attached **i**

Launch Instance **Connect** **Actions** **^**

Filter by tags and attributes or search

<input type="checkbox"/>	Name	Instance ID
<input type="checkbox"/>		i-0212c78ecec349
<input checked="" type="checkbox"/>		i-06afe08ce9c034

- Connect**
- Get Windows Password
- Create Template From Instance
- Launch More Like This
- Instance State ▶
- Instance Settings ▶
- Image ▶

Connect To Your Instance



You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:

[Download Remote Desktop File](#)

When prompted, connect to your instance using the following details:

Public DNS

User name Administrator

Password [Get Password](#)

If you've joined your instance to a directory, you can use your directory credentials to connect to your instance.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

[Close](#)

● ——— ● ——— ○ ——— ○

Activate Register **Setup** Initialize

The settings below are all you need to get started.

Identity Store

You cannot change the identity store after initializing.

Local

Active Directory

Run As Service Account

NT AUTHORITY\NetworkService

User Account

Gateway Port

Port Number: (Default)

Include samples

Include sample workbooks

Initialize

Initializing...

Step 7 of 29

Waiting for services to reconfigure.

```
5:37:53 AM succeeded: Updating Configuration.  
5:37:53 AM succeeded: Validating that there are no pending  
changes.  
5:37:53 AM succeeded: Generating passwords.  
5:37:55 AM succeeded: Generating search server ssl certificate.  
5:37:56 AM succeeded: Generating Key Management data.  
5:37:56 AM succeeded: Promoting configuration.
```

This process could take a while to finish.

Click [Learn more](#) about configuring your server deployment with Tableau Services Manager. The server will be running after the initialization is complete.

You will need to create a Tableau Server Administrator account when this process finishes.



Initialization Complete

You will need to create a Tableau Server Administrator account.

[Learn more](#)

Continue



Create a server administrator account to access Tableau Server



New Administrator Account

Tableau + a b | e a u Content Users Groups Schedules Tasks **Status** Settings 🔍

Server Status

Process Status

The real-time status of processes running in Tableau Server.

Process	WIN-SM37026C748
Gateway	✓
Application Server	✓
VizQL Server	✓ ✓
Cache Server	✓ ✓
Search & Browse	✓
Backgrounder	✓ ✓
Data Server	✓ ✓
Data Engine	✓
File Store	✓
Repository	✓
Tableau Prep Conductor	✓

✓ Active
🔄 Busy
✓ Passive
⚠️ Unlicensed
✖️ Down
☐ Status unavailable

- Create new Tableau Server installation.
- Add additional node to existing Tableau Server cluster.

Topology

[Security](#)
[User Identity & Access](#)
[Notifications](#)
[Licensing](#)

Topology

Configure and improve Tableau Server performance by adding or removing nodes

node1

EC2AMAZ-TP432NR

Gateway	<input checked="" type="checkbox"/>
Application Server	1 ▼
Interactive Microservic...	1 ▼
VizQL Server	2 ▼
Cache Server	2 ▼
Cluster Controller	<input checked="" type="checkbox"/>

Add a Node

Step 1

Download the node bootstrap configuration file and locate your Tableau Server installer. The same installer can be used to install multiple nodes. [Having trouble finding the installer?](#)

[Download Bootstrap File](#)

Setup - Tableau Server 2019.1 (20191.18.1204.2126)

Node Configuration

The bootstrap file can be generated using the "tsm topology nodes get-bootstrap-file" command on the initial node.

Bootstrap File

Tableau Services Manager (TSM) Username:

Tableau Services Manager (TSM) Password:

Tableau Server

 [STATUS](#) [MAINTENANCE](#) [CONFIGURATION](#) Tableau Server is running  [Sign out](#)

Security Configure and improve Tableau Server performance by adding or removing nodes and changing process configurations and other settings. [Learn More](#)

Explore

Top-level Projects ▾

Create

Select All



Default




The default project that was automatically created by Tableau.



Finance




Content Users Groups Schedules Tasks Status

Groups 1

+ New Group
▼ 0 items selected

↑ Name		Users
<input type="checkbox"/>	ALL All Users	4

New Group

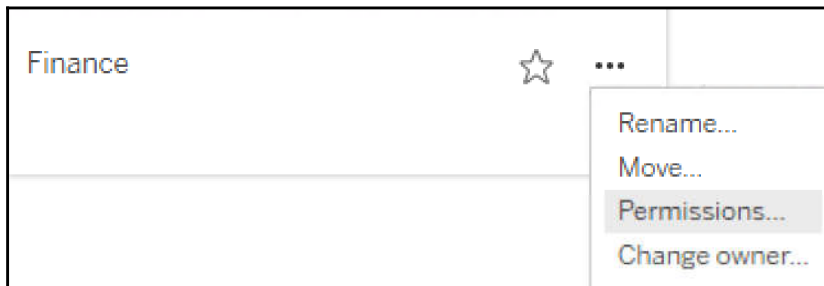
Enter a name for this group

Cancel
Create

Site role	View/Interact	Subscriptions & Alerts	Web Edit	Publish Views	Create Data Sources
Creator	✓	✓	✓	✓	✓
Explorer (can publish)	✓	✓	✓	✓	
Explorer	✓	✓	✓		
Viewer	✓	✓			
Unlicensed					

Server administrators can manage Server and manage/create Sites

Site administrators can manage a Site



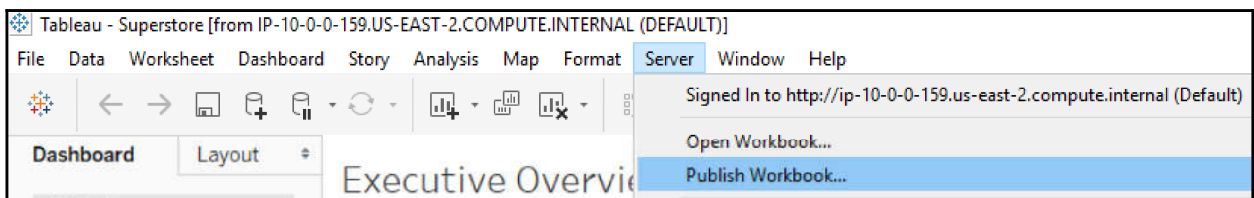
User / Group	Project	Workbooks	View	Interact/Edit	Edit	Data sources	Flows
All Users (11)	Viewer	None				None	None
Finance - Developers (3)	Publisher	Editor	✓	✓	✓	✓	None
Finance - Viewers (2)	Viewer	Viewer	✓	✓	✓	None	None

Content Permissions in Project

Permissions for content in the project "Finance" are:

- Locked to the project**
 Content in this project always uses the default permissions.
 Permissions for individual items in this project cannot be modified.
Default permissions will be applied to all content in the project when you save.
- Managed by the owner**
 Content in this project starts with the default permissions.
 Permissions for individual items in this project can be modified.

Cancel Save



Publish Workbook to Tableau Server ✕

Project
Finance ▼

Name
Superstore ▼

Description

Tags
[Add](#)

Sheets
All [Edit](#)

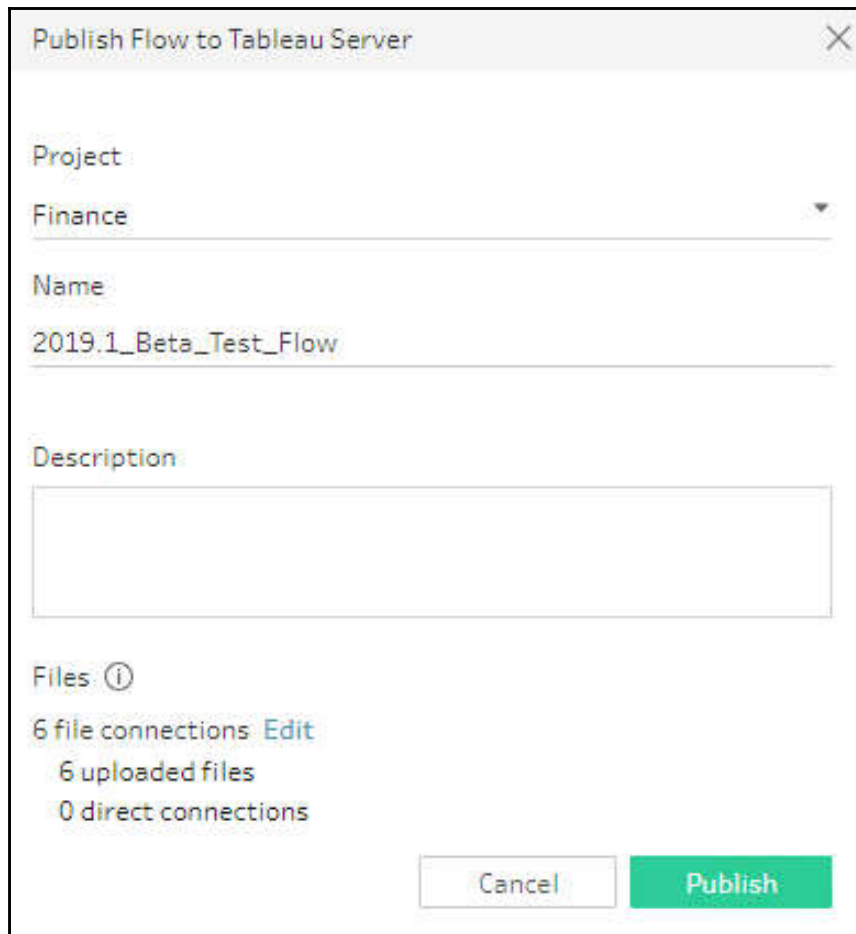
Permissions
Set to existing workbook default [Edit](#)

Data Sources
3 embedded in workbook [Edit](#)

More Options

- Show sheets as tabs
- Show selections
- Include external files

[Publish](#)



Instance: **i-02e5001f7df9cabb8** Elastic IP: **54.144.74.211**

[Description](#)
[Status Checks](#)
[Monitoring](#)
[Tags](#)

Instance ID	i-02e5001f7df9cabb8	Public DNS (IPv4)	ec2-54-144-74-211.compute-1.amazonaws.com
Instance state	running	IPv4 Public IP	54.144.74.211
Instance type	m4.xlarge	IPv6 IPs	-
Elastic IPs	54.144.74.211*	Private DNS	ip-10-0-0-35.ec2.internal
Availability zone	us-east-1d	Private IPs	10.0.0.35
Security groups	Tabelau . view inbound rules . view outbound rules	Secondary private IPs	
Scheduled events	No scheduled events	VPC ID	vpc-06c8e084cb4155acb
AMI ID	RHEL-7.6_HVM_GA-20181017-x86_64-0-Hourly2-GP2 (ami-011b3ccf1bd6db744)	Subnet ID	subnet-06f7fcfb4474833f
Platform	-	Network interfaces	eth0
IAM role	-	Source/dest. check	True
Key pair name	tableaucookbook	T2/T3 Unlimited	-

Tableau Services Manager x Projects - Tableau Server x +

Not secure | ip-10-0-0-35.ec2.internal/#/projects

[Content](#)
[Users](#)
[Groups](#)
[Schedules](#)
[Tasks](#)

Projects 2 **Workbooks** 2 **Views** 16 **Data sources** 0

+ New Project 0 items selected Sort by Name (A-Z)

Name	Projects	Workbooks	Views	Data sources	Owner	Created
Default	0	0	0	0		Jan 27, 2019, 9:40 PM
Tableau Samples	0	2	16	0	Administrator	Jan 27, 2019, 10:02 PM

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks
	i-0f42e304ab1488ba	m4.large	us-east-1d	running	2/2 checks
	i-02e5004139ecabb8	m4.xlarge	us-east-1d	running	2/2 checks

Windows Client (arrow pointing to i-0f42e304ab1488ba)

Tableau Server (arrow pointing to i-02e5004139ecabb8)

Description	Status Checks	Monitoring	Tags
Instance ID	i-0f42e304ab1488ba		
Instance state	running		
Instance type	m4.large		
Elastic IPs	52.204.114.54*		
Availability zone	us-east-1d		
Public DNS (IPv4)		ec2-52-204-114-54.compute-1.amazonaws.com	
IPv4 Public IP		52.204.114.54	
IPv6 IPs		-	
Private DNS		ip-10-0-0-80.ec2.internal	
Private IPs		10.0.0.80	

```

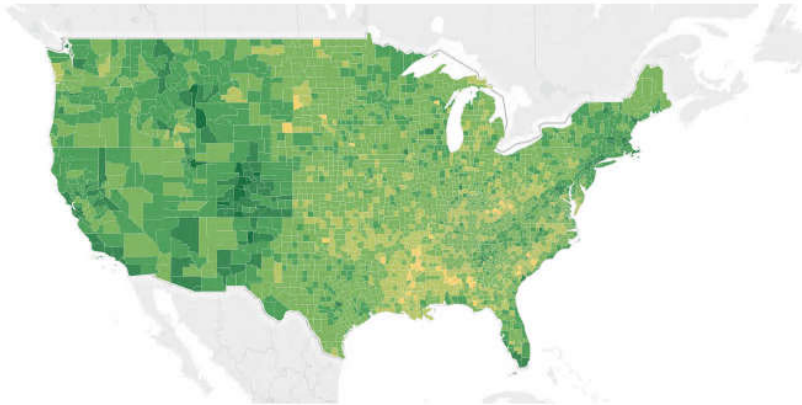
Administrator: Command Prompt
C:\tabcmd\Command Line Utility>tabcmd login -s http://ip-10-0-0-35.ec2.internal
-u Administrator -p Airmax86
===== Creating new session
===== Server: http://ip-10-0-0-35.ec2.internal
===== Username: Administrator
===== Connecting to the server...
===== Signing in...
===== Succeeded

C:\tabcmd\Command Line Utility>_

```

Is Your County Obese?

Select your county to see how it compares with other counties in the country

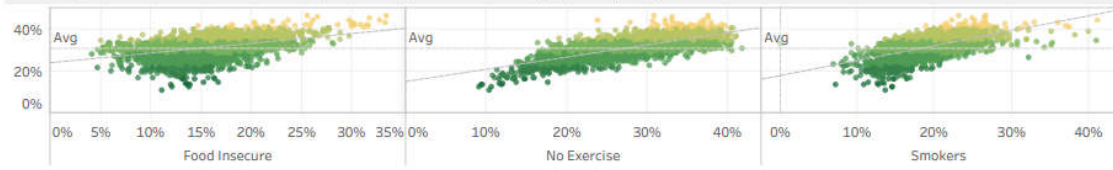


Select Region:
All

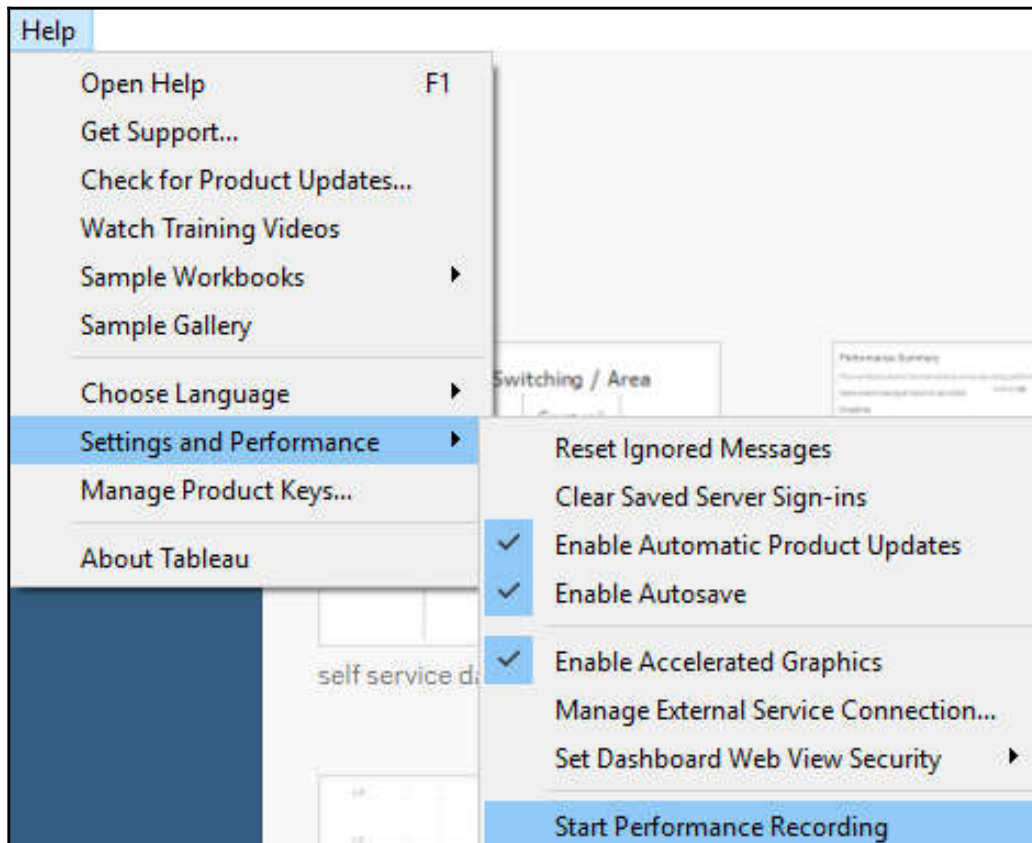
Select State:
No items highlighted

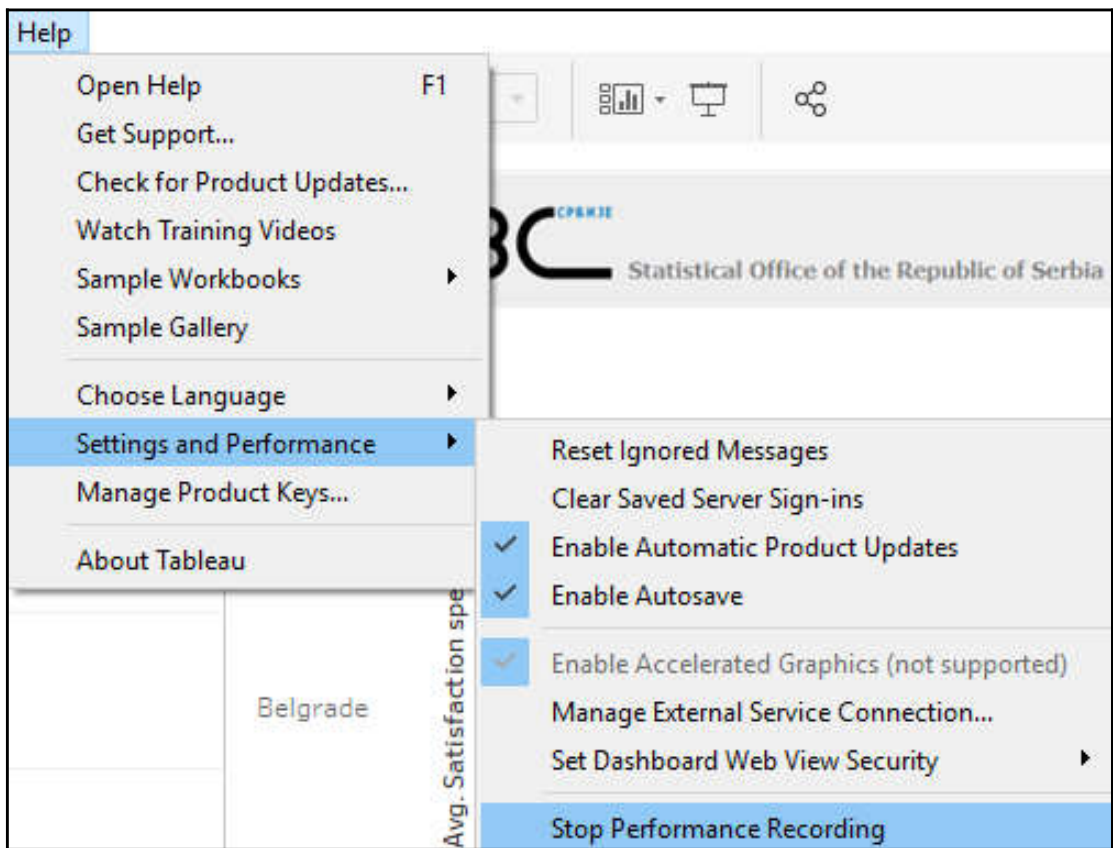
Obesity Rate:
11% 47%

Obesity's correlation with diet, exercise, and smoking (% of pop.) - All



Chapter 14: Tableau Troubleshooting





Performance Summary

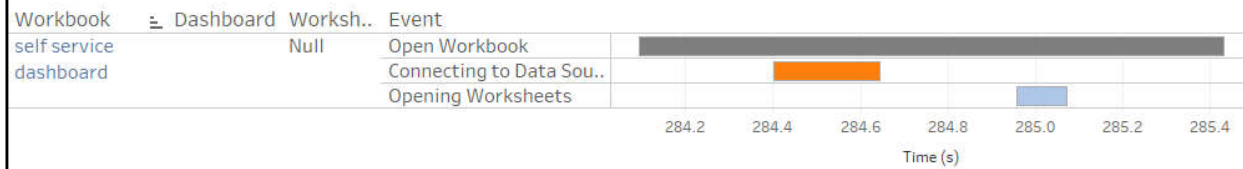
This workbook shows the main events while recording performance. Search Help for details on how to interpret the workbook and improve performance of Tableau.

Show Events taking at least (in seconds):

0.10

1.33

Timeline

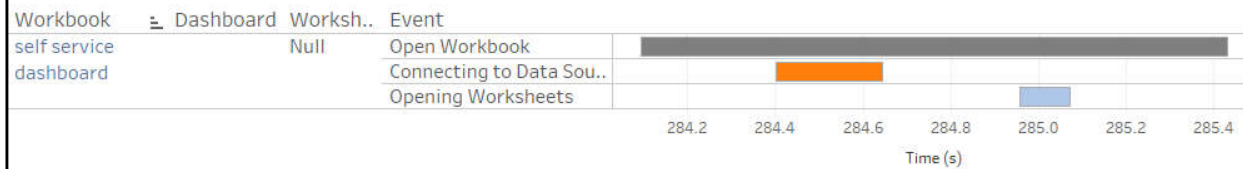


Events Sorted by Time



Query

Timeline



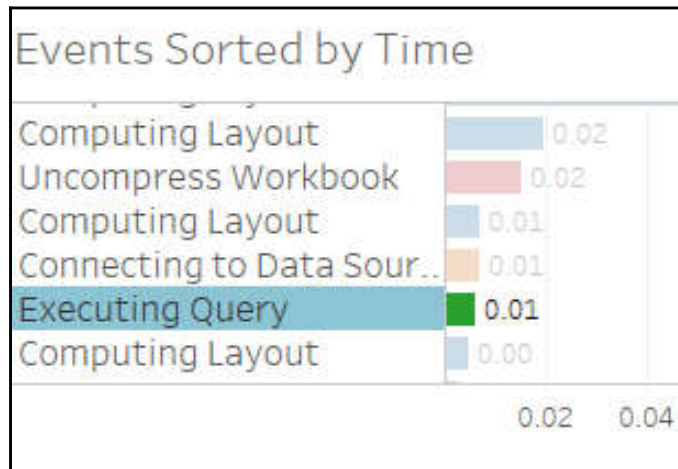
Events Sorted by Time



Show Events taking at least (in seconds):

0.10

1.33

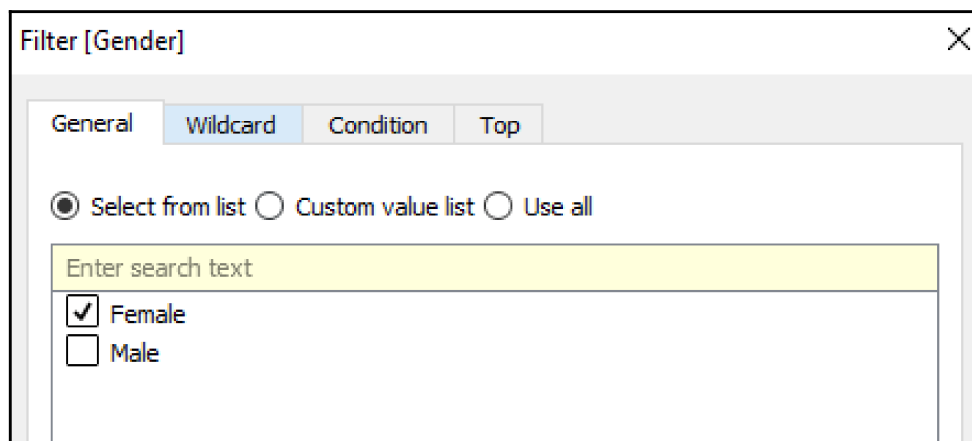
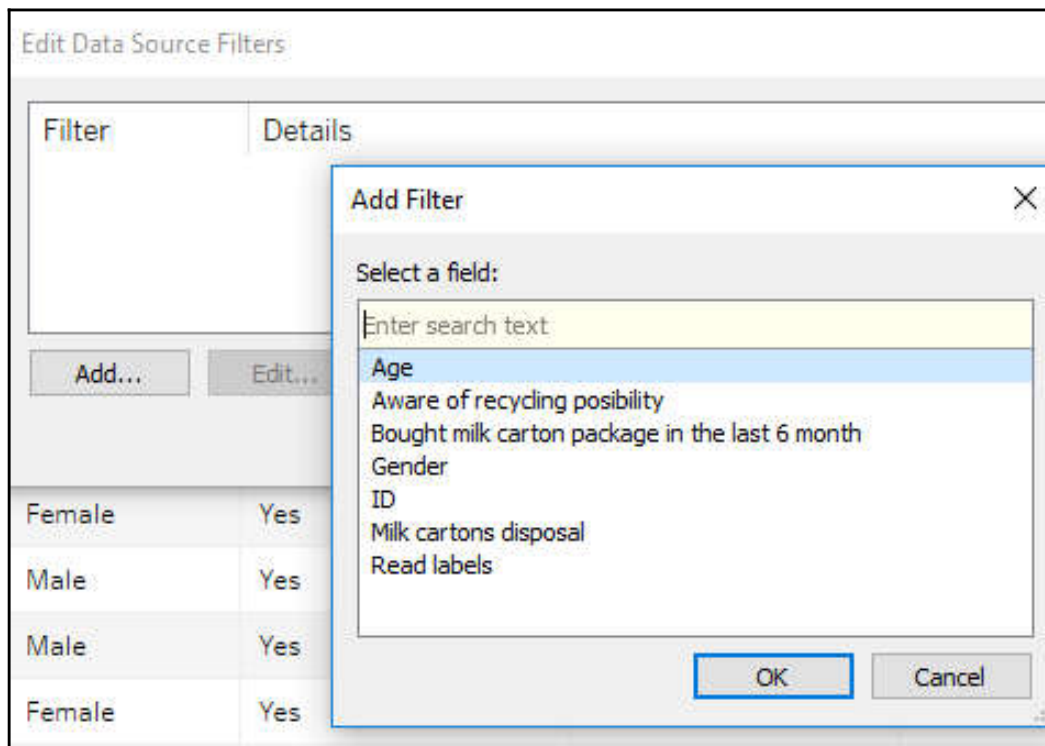


Query

```
SELECT "Usage"."Area" AS "Area",
  "Usage"."Settlement type" AS "Calculation_858217245440413696",
  AVG(CAST("Usage"."Internet penetration" AS DOUBLE PRECISION OR NULL)) AS "avg:Internet penetration:ok"
FROM "TableauTemp"."Usage$" "Usage"
GROUP BY 1,
2
```

Data Source

Filters
0 | Add



Abc	Abc	Abc
Recycling campaign effects.c		
Bought milk carto...		
Yes		
Yes		
Yes		
Yes		
Yes		
Yes		
Yes		
Yes	Yes	

Filter Field [Date] ✕

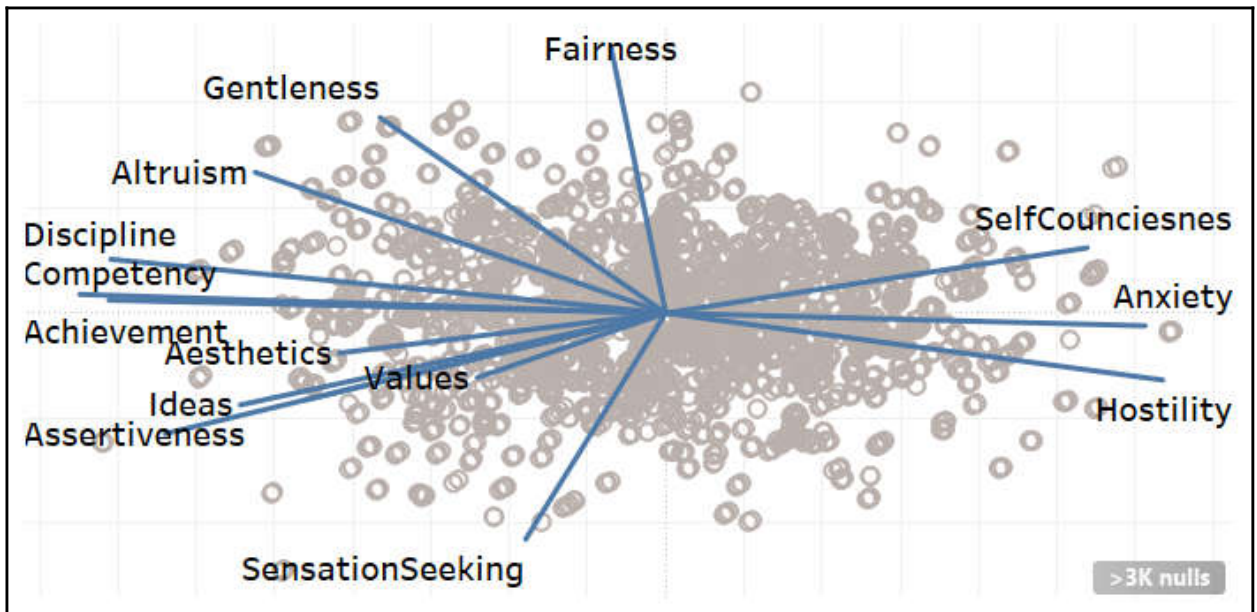
How do you want to filter on [Date]?

- Relative Date
- Range of Dates**

- Years
- Quarters
- Months
- Days
- Week numbers
- Weekdays
- Month / Year
- Month / Day / Year
- Individual Dates

- Count
- Count (Distinct)
- Minimum
- Maximum

- Attribute



Data Source
2816 marks 1 row by













File	Data	Worksheet	Dashboard	Story	Analysis	Map
<u>N</u> ew						Ctrl+N
<u>O</u> pen...						Ctrl+O
<u>C</u> lose						
<u>S</u> ave						Ctrl+S
Save <u>A</u> s...						
<u>R</u> evert to Saved						F12
Export As Version...						▶
Export Packaged Work <u>o</u> okbook...						
Show Start Page						Ctrl+2
Share...						
<u>P</u> aste						Ctrl+V
<u>I</u> mport Workbook...						
Page Set <u>u</u> p...						
<u>P</u> rint...						Ctrl+P
Print to P <u>D</u> F...						
<u>W</u> orkbook Locale						▶
Repository <u>L</u> ocation...						
<u>1</u> ...\self service dashboard.twbx						
<u>2</u> C:\Slaven\...\2 Story\story2.twb						
<u>3</u> ...\PCA personality traits.twb						
<u>4</u> C:\Slaven\...\3 cluster\klasteri.twb						
<u>5</u> C:\...\3 Forecasting with Tableau\Random forest.twbx						
<u>6</u> ...\Forecasting with Tableau.twbx						
<u>7</u> C:\Slaven\...\2 Story\Story.twb						
<u>8</u> C:\...\2 Koresp\Telco_image.twb						
<u>9</u> ...\age and blood pressure v2.twb						
<u>E</u> xit						

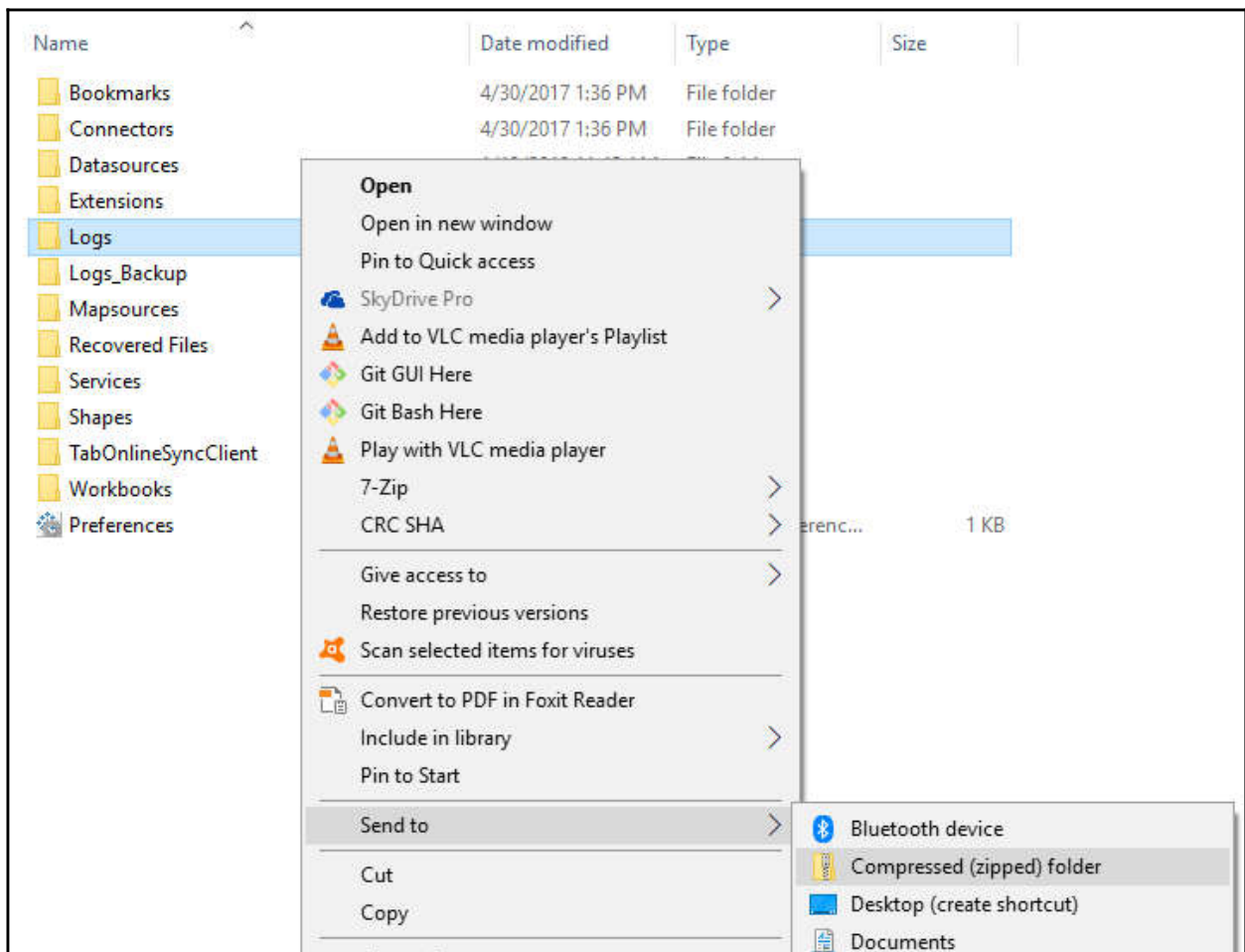
Name	Date modified	Type	Size
Bookmarks	4/30/2017 1:36 PM	File folder	
Connectors	4/30/2017 1:36 PM	File folder	
Datasources	1/13/2018 11:45 AM	File folder	
Extensions	1/13/2018 11:45 AM	File folder	
Logs	1/27/2019 5:42 PM	File folder	
Mapsources	4/30/2017 1:36 PM	File folder	
Recovered Files	4/30/2017 1:36 PM	File folder	
Services	10/20/2018 10:17 ...	File folder	
Shapes	5/22/2017 11:11 PM	File folder	
TabOnlineSyncClient	1/6/2019 4:54 PM	File folder	
Workbooks	1/27/2019 5:42 PM	File folder	
Preferences	5/22/2017 11:11 PM	Tableau Preferenc...	1 KB

```

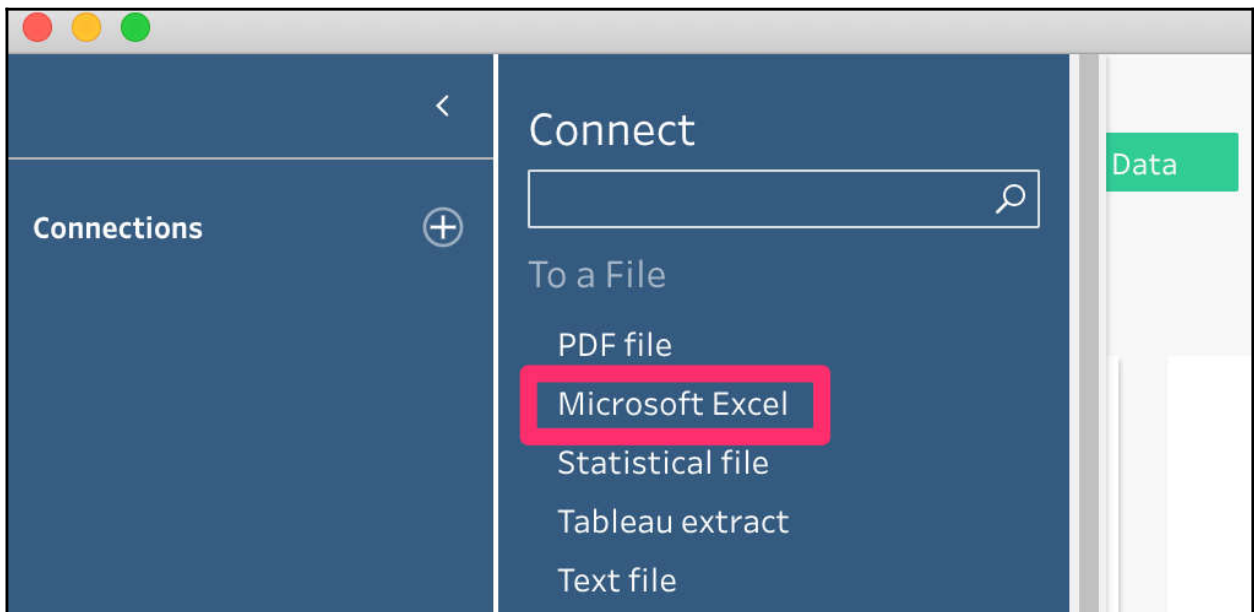
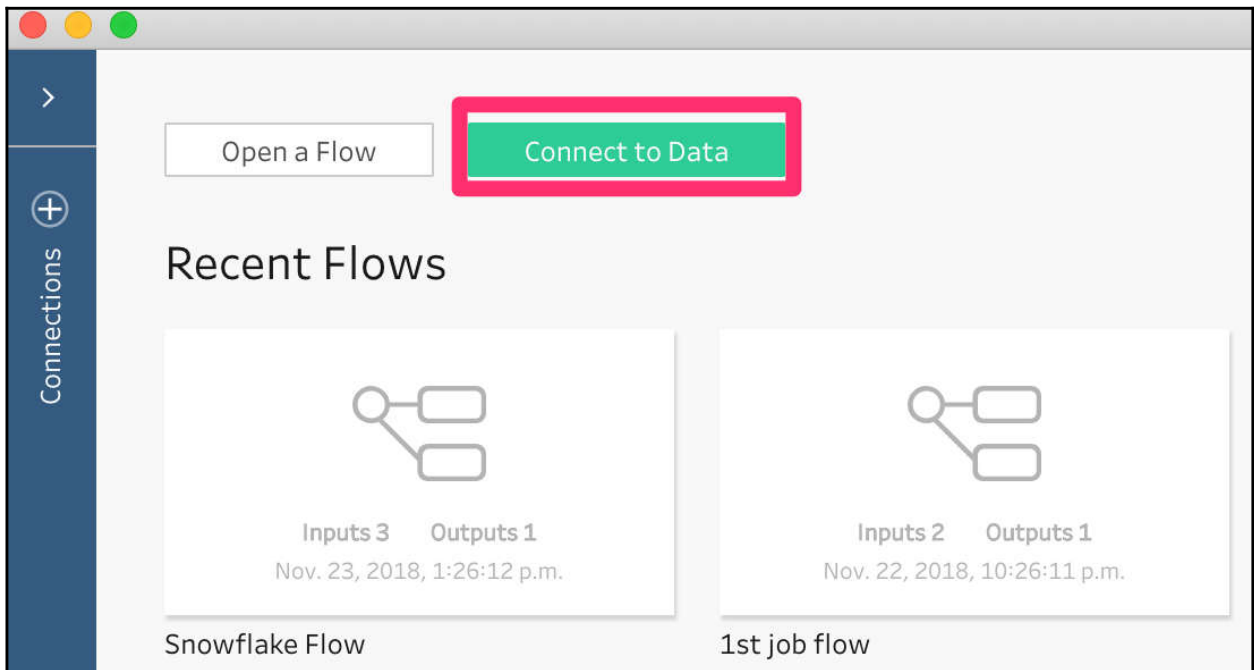
log_bk - Notepad
File Edit Format View Help
[{"ts": "2019-01-14T22:57:49.067", "pid": 8944, "tid": "19d4", "sev": "info", "req": "-", "sess": "-", "site": "{CEBD4F2B-9C49-4059-A84D-FBAD487860BB}", "user": "
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es", "QT_D3DCREATE_MULTITHREADED": "1", "SESSIONNAME": "Console", "SystemDrive": "C:", "SystemRoot": "C:\\WINDOWS", "TEMP": "C:\\Users\\Slaven\\AppData\\Lc
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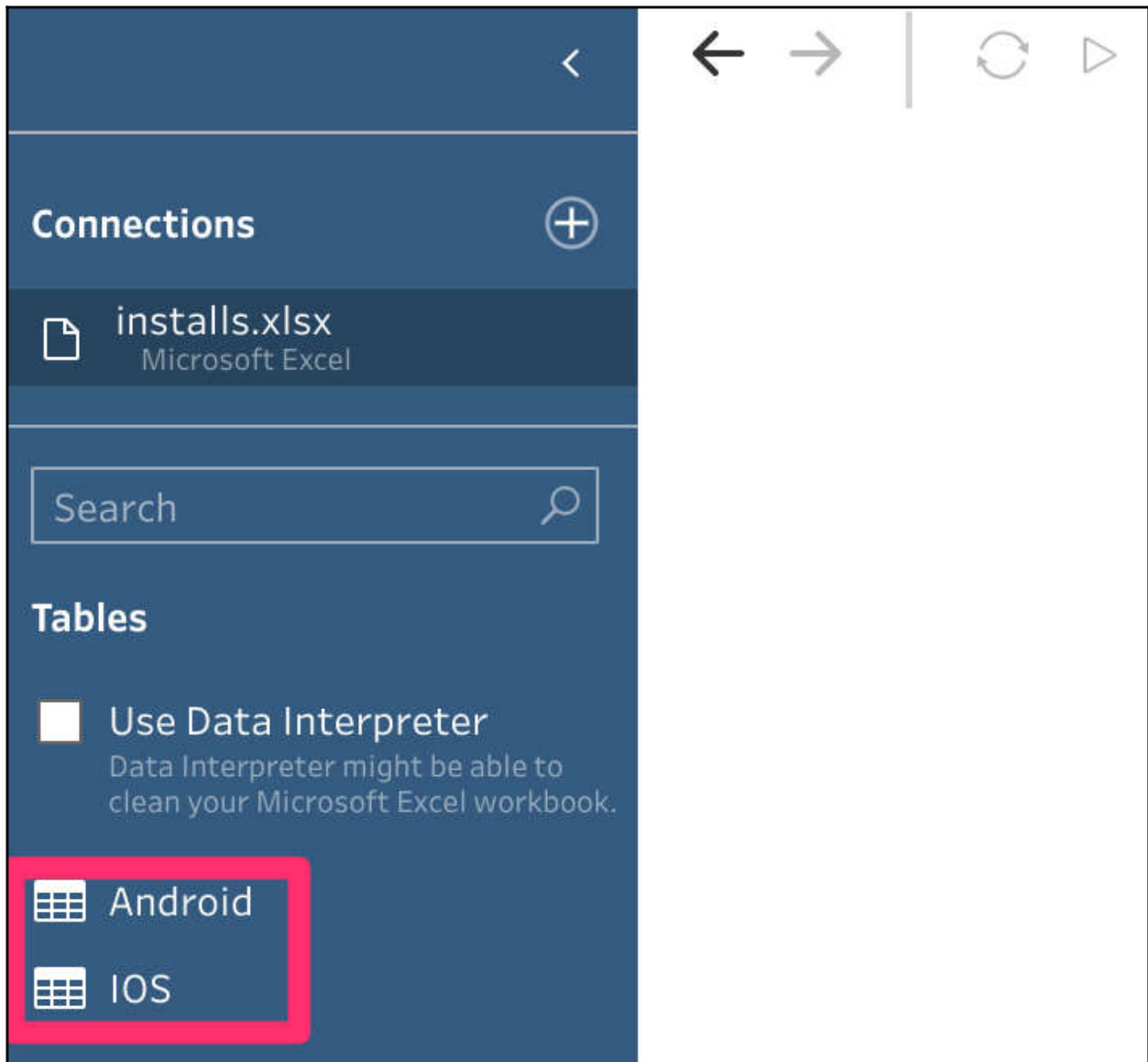
```

Name	Date modified	Type	Size
 Bookmarks	4/30/2017 1:36 PM	File folder	
 Connectors	4/30/2017 1:36 PM	File folder	
 Datasources	1/13/2018 11:45 AM	File folder	
 Extensions	1/13/2018 11:45 AM	File folder	
 Logs_Backup	1/27/2019 5:42 PM	File folder	
 Mapsources	4/30/2017 1:36 PM	File folder	
 Recovered Files	4/30/2017 1:36 PM	File folder	
 Services	10/20/2018 10:17 ...	File folder	
 Shapes	5/22/2017 11:11 PM	File folder	
 TabOnlineSyncClient	1/6/2019 4:54 PM	File folder	
 Workbooks	1/27/2019 5:42 PM	File folder	
 Preferences	5/22/2017 11:11 PM	Tableau Preferenc...	1 KB



Chapter 15: Preparing Data for Analysis with Tableau Prep





The screenshot shows a software interface with a left sidebar and a main workspace. The sidebar includes a 'Connections' section with a file named 'installs.xlsx' (Microsoft Excel) and a 'Tables' section with 'Android' and 'IOS' listed. A red arrow points from the 'IOS' table in the sidebar to a grid icon in the workspace. The workspace shows an 'Input' section with 'Multiple Files' selected, and a table of selected fields for the 'IOS' connection.

Type	Field Name	Original Field Name
#	2	2
Abc	17/07/2015	17/07/2015

A close-up of the 'IOS' connection icon, which is a blue grid icon with a plus sign. A context menu is open to the right, listing several actions:

- + Add Step
- Σ Add Aggregate
- Add Pivot
- Add Join
- Add Union
- Add Output



IOS



Clean 1

Clean 1 2 Fields 54 Rows



Filter Values...



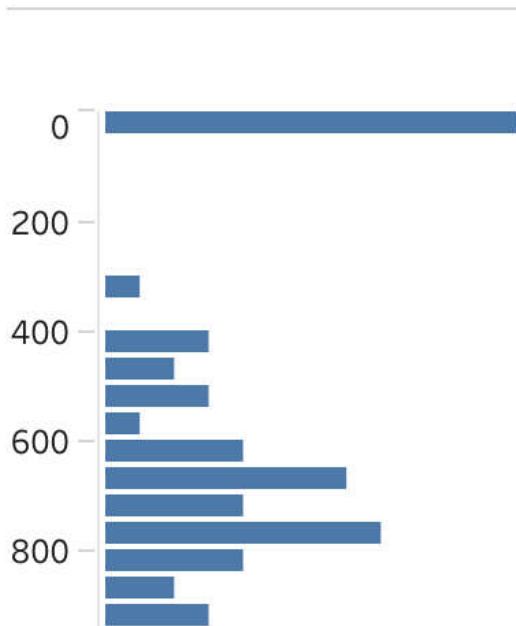
Create Calculated Field...



Changes (0)

Summary

2 44



Abc

Detail

17/07/2015 54

<i>null</i>	
13/08/2015	
13/09/2015	
14/08/2015	
14/09/2015	
15/08/2015	
15/09/2015	
16/08/2015	
16/09/2015	
17/08/2015	
17/09/2015	
18/08/2015	

Union 1 5 Fields 113 Rows

Settings Changes (0)

Inputs: Android, Clean 1

Resulting Fields: 4 Mismatching Fields from 5 resulting fields.

Mismatched Fields: 1, 17/07/2018, Number Installs, Install Date

Union Results: Show only mismatched fields

Table Names	Number Installs	Install Date	1	17/07/2018
installs.xlsx/Android	null	null	null	null
installs.xlsx/IOS	13/08/2018	13/08/2018	13/08/2018	13/08/2018
	13/09/2018	13/09/2018	13/09/2018	13/09/2018
	14/08/2018	14/08/2018	14/08/2018	14/08/2018
	14/09/2018	14/09/2018	14/09/2018	14/09/2018
	15/08/2018	15/08/2018	15/08/2018	15/08/2018
	15/09/2018	15/09/2018	15/09/2018	15/09/2018
	16/08/2018	16/08/2018	16/08/2018	16/08/2018
	16/09/2018	16/09/2018	16/09/2018	16/09/2018
	17/08/2018	17/08/2018	17/08/2018	17/08/2018
	17/09/2018	17/09/2018	17/09/2018	17/09/2018
	18/08/2018	18/08/2018	18/08/2018	18/08/2018

Fields 3 Rows **Sampled**

Files Data Sample Changes (2)

Android Fields selected: 2 of 2 Filter Values...

Select the fields to include in your flow. If you make changes to the data again.

<input checked="" type="checkbox"/>	Type	Field Name	Original Field Name
<input checked="" type="checkbox"/>	#	Number Installs	1
<input checked="" type="checkbox"/>	Abc	Install Date	17/07/2018

Union Results

Show only mismatched fields

Abc



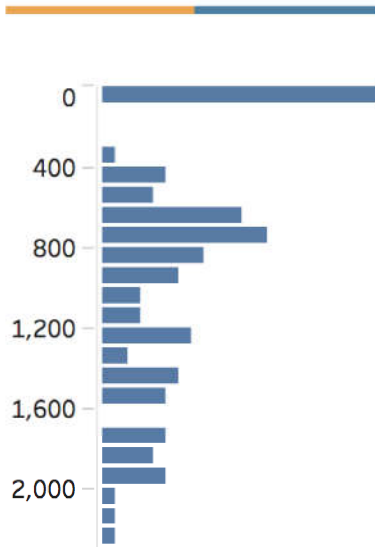
Table Names 2

installs.xlsx/Android

installs.xlsx/IOS

#

Number Installs 95



Data Type

Number (decimal)

Number (whole)

📅 Date & Time

✓ 📅 Date

Abc String

Data Role

✓ None

Email

URL

Geographic ▶

The screenshot displays a data processing workflow. At the top, a flow diagram shows data from 'IOS' and 'Android' sources being processed by 'Clean 1' and then combined in 'Union 1' before reaching the 'Output' stage. Below this, the 'Settings' panel shows 'Clean 1' and 'Android' as active components. The main 'Union Results' panel features a table with the following columns: 'Table Names' (2 rows), 'Install Date' (63 rows), and 'Number Installs' (95 rows). A context menu is open over the 'Table Names' column, listing various actions such as 'Filter', 'Group and Replace', 'Clean', 'Split Values', 'View State', 'Detail', 'Summary', 'Rename Field', 'Create Calculated Field...', and 'Remove Field'. The 'Create Calculated Field...' option is highlighted with a red border.

Table Names	Install Date	Number Installs
installs.xlsx/Android		
installs.xlsx/IOS		

Edit Field

Field Name: OS Name

Reference: All

IF CONTAINS([Table Names], "IOS") THEN "IOS" ELSE "Android" END

CONTAINS(string, substring)
Returns true if the string contains the substring.
Example: CONTAINS("Calculation", "alcu") is true

Calculation is valid ^

Apply Save

Output 3 Fields

Save output to file

Save to file
 Publish as a data source

Browse

Name: Output

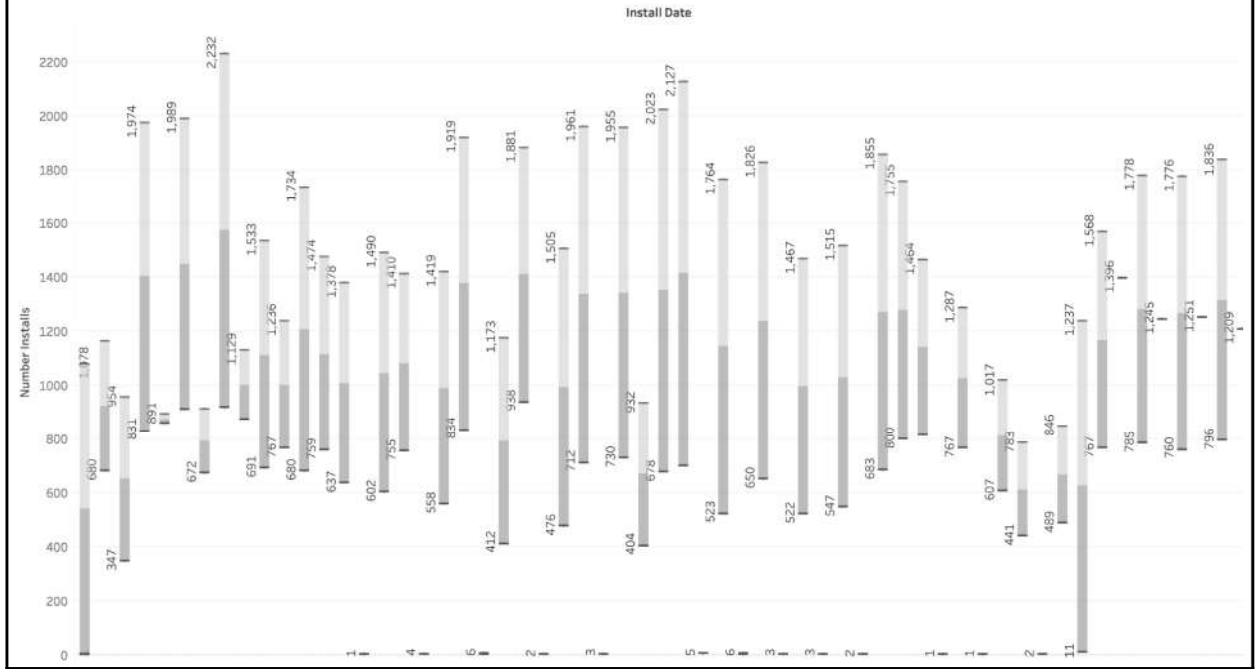
Location: /.../My Tableau Prep Repository/Datasources

Output type: Tableau Data Extract (.hyper)

Save to Output.hyper

Table Names	Number Installs	Install Date
installs.xlsx/Android	4	2018-07-20
installs.xlsx/Android	4	2018-07-21
installs.xlsx/Android	6	2018-07-22
installs.xlsx/Android	2	2018-07-24
installs.xlsx/Android	5	2018-07-27
installs.xlsx/Android	1	2018-07-28
installs.xlsx/Android	3	2018-07-30
installs.xlsx/Android	3	2018-07-31
installs.xlsx/Android	2	2018-03-08
installs.xlsx/Android	1	2018-04-08

Installs by Date



Snowflake

Server:

 ✕

Role:

Enter information to sign in to the server:

Authentication:

 ▼

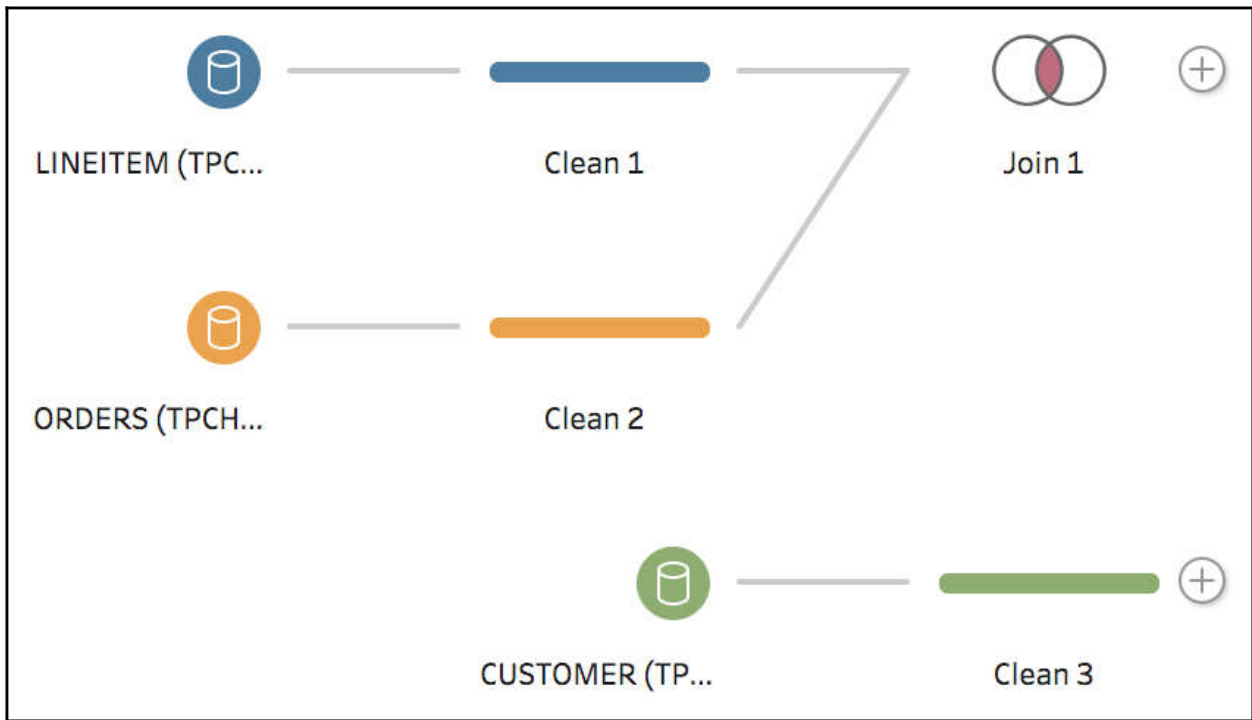
Username:

 ✕

Password:

 ✕

SAML IdP(Okta):



Join 1 25 Fields 488 Rows Sampled Filter Values... Create Calculated Field... Search

Settings Changes (0)

Applied Join Clauses

Clean 1: L_ORDERKEY = Clean 2: O_ORDERKEY

Join Type: Inner join

Click the graphic to change the join type.

Summary of Join Results

Click the bar segments to view the included and excluded values.

Mismatched values

	Included	Excluded
Clean 1	488	512
Clean 2	133	922,943
Join Result	488	

Join Clauses Show only mismatched values

Clean 1	Clean 2
↑ L_ORDERKEY	↑ O_ORDERKEY
1,800,001	1
1,800,002	2
1,800,003	3
1,800,004	4
1,800,005	5
1,800,006	6
1,800,007	7
1,800,032	32
1,800,033	33
1,800,034	34
1,800,035	35
1,800,036	36
1,800,037	37
1,800,038	38
1,800,039	39

Join Results

#	L_ORDERKEY	#	L_PARTKEY
133		487	
1,800,000		0	
2,200,000		40,000	
2,600,000		80,000	
3,000,000		120,000	
		160,000	
		200,000	

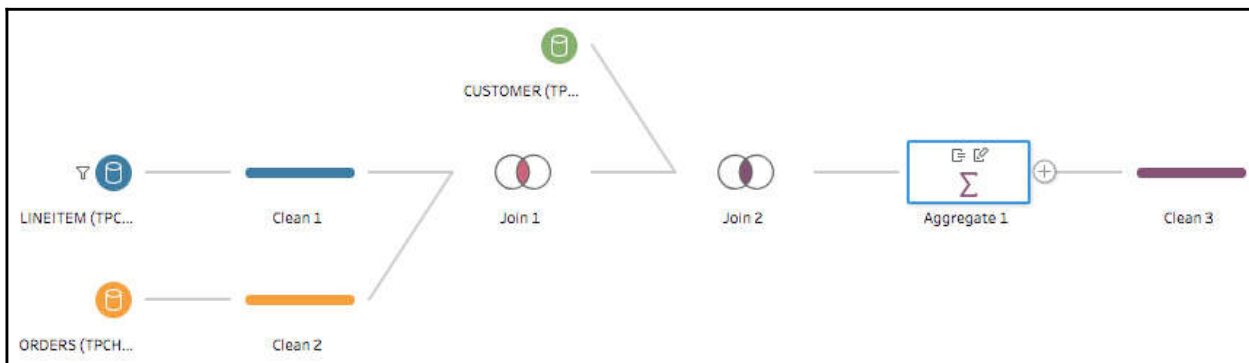
L_ORDERKEY	L_PARTKEY	L_SUPPKEY	L_LINENUMBER
1,800,001	92,830	358	7

Edit Field

Field Name

Discounted Price Amount

$[\text{Base Price Amount}] * (1 - [\text{Discount Rate}])$






Grouped Fields			Aggregated Fields		
#	GROUP		#	SUM	
L_ORDERKEY	1		Quantity	6	
L_LINENUMBER	6		Base Price Amount	6	
C_MKTSEGMENT	1		Discount Rate	4	
1		AUTOMOBILE	8	13,309.6	0.04
2			17	21,168.23	0.07
3			24	22,824.48	0.09
4			28	28,955.64	0.1
5			32	45,983.16	
6			36	49,620.16	


Abc



Data Type

- # Number (decimal)
-  # Number (whole)
-  Date & Time
-  Date
- ✓ Abc String

Data Role

- ✓ None
- Email
- URL
- Geographic 

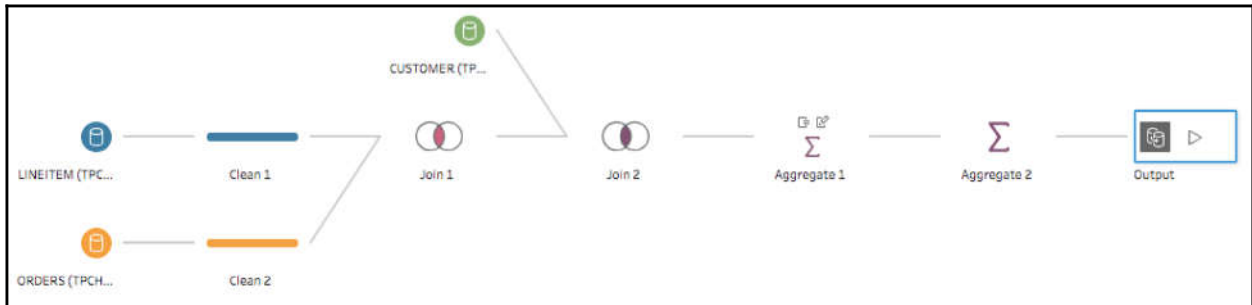


Tableau - Book1

Output Extract

Connection: Live Extract

Filters: 0 | Add

Connections: Add

- Output (Tableau Extract)

Table: Extract (Extract.Extract)

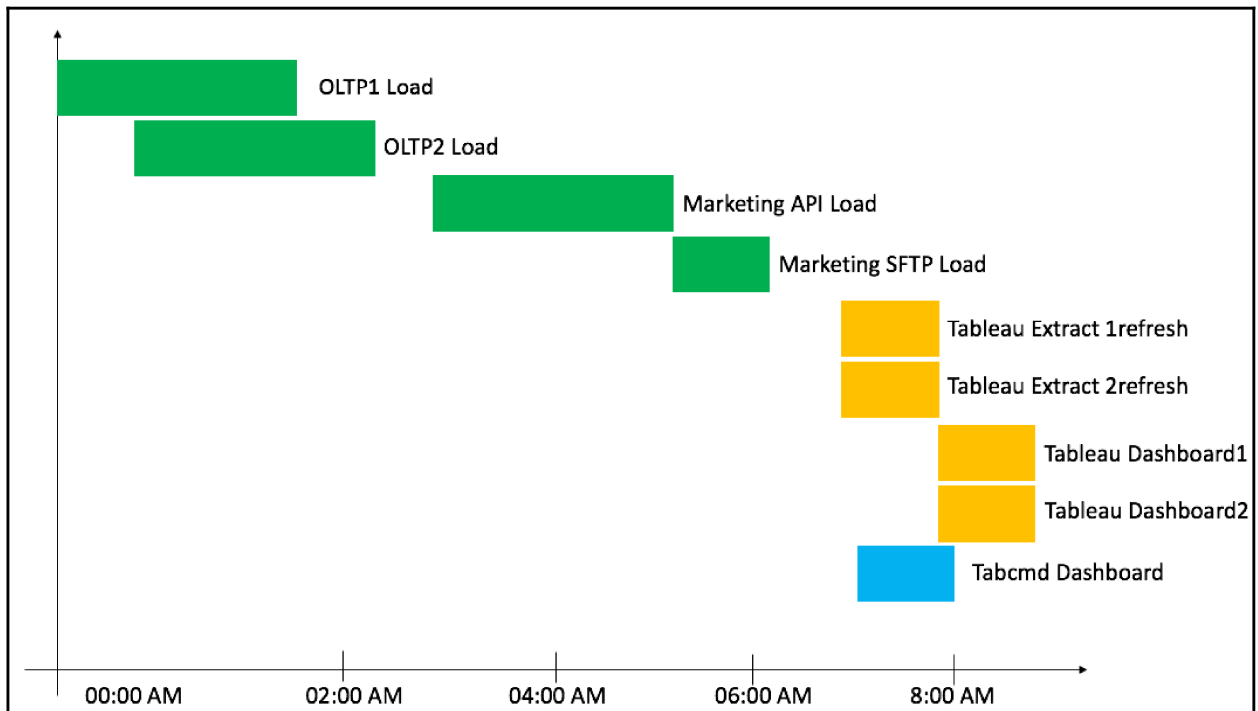
Sort fields: Data source order | Show aliases Show hidden fields 5 rows

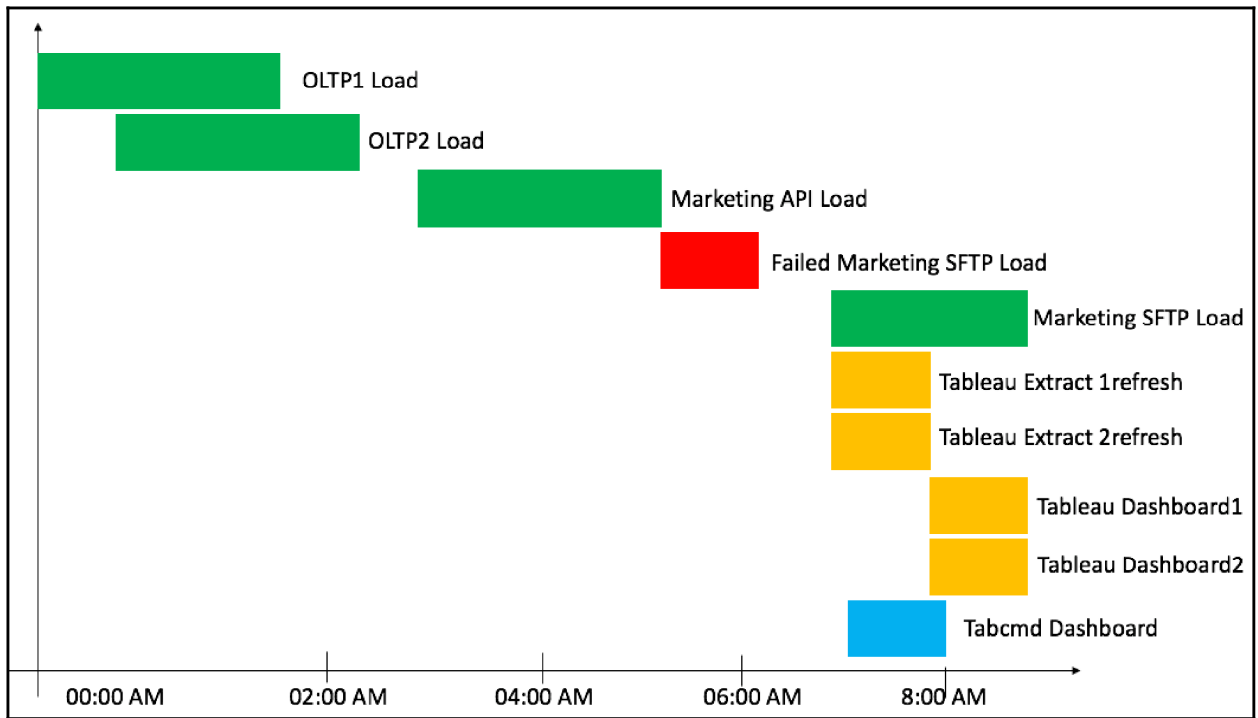
#	Discounted Price ...	Marketing Segment	#	Base Price Amount
	44,141,243,552.35	BUILDING		46,461,310,817.48
	43,462,016,360.30	MACHINERY		45,751,962,535.64
	43,282,594,635.42	AUTOMOBILE		45,558,952,448.95
	43,570,497,982.24	FURNITURE		45,863,616,767.09
	43,645,871,354.68	HOUSEHOLD		45,941,468,332.04

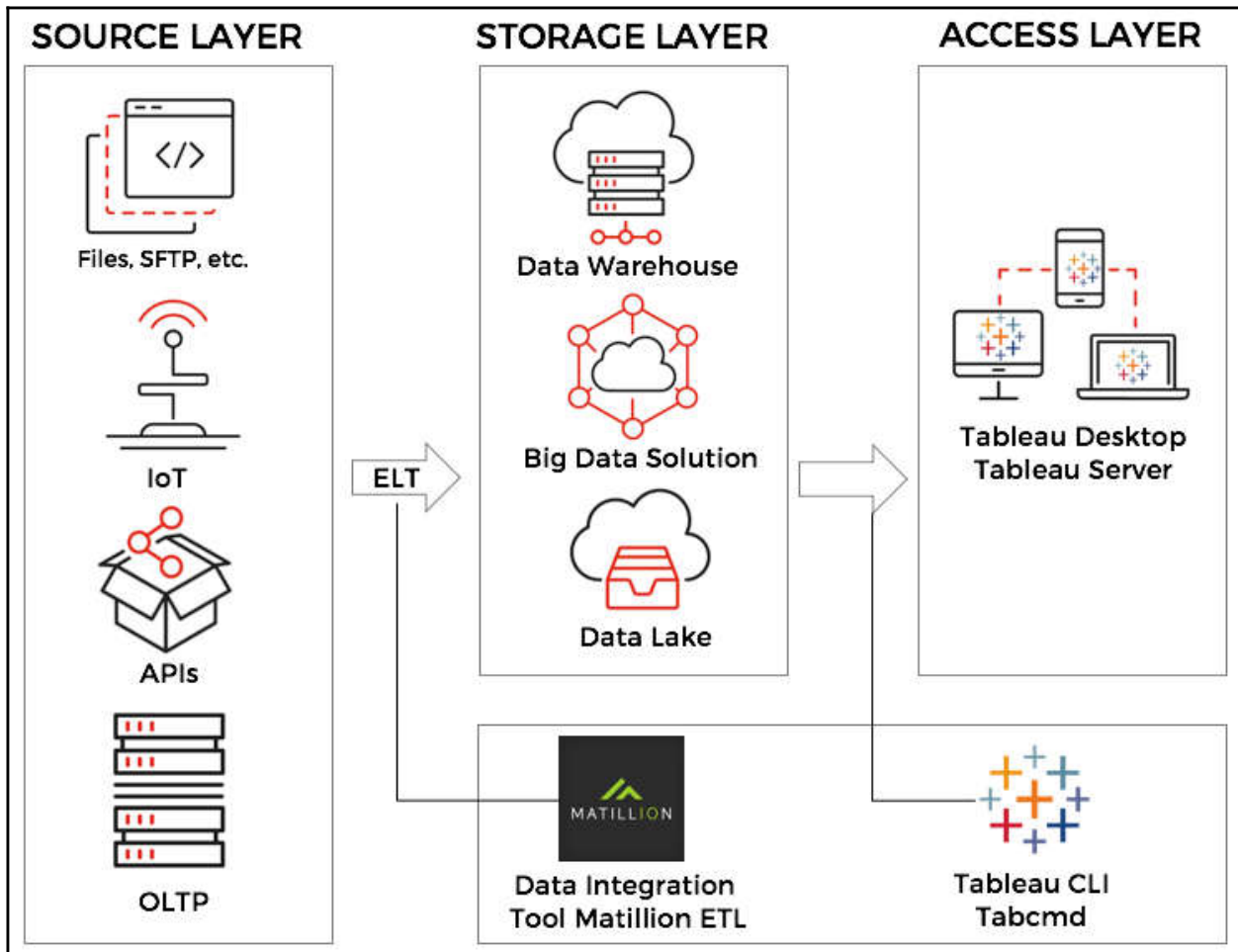
Data Source | Sheet 1

✓	27b9f9fb-a...	SELECT "b15f6e92-e6c9-4137-a0a7-9c564c"."L_DISCOUNT" AS "L_DISCOUNT", "b15f6e9...	TABLEAU Cookbook
✓	7aef9df4-f5...	SELECT "6d285608-20ca-4f84-b594-65f22f"."O_CUSTKEY" AS "O_CUSTKEY", "6d285608...	TABLEAU Cookbook
✓	d584dff0-1d...	SELECT "edcd0042-63f1-4afb-b973-ee02b4"."L_ORDERKEY" AS "L_ORDERKEY", "edcd0...	TABLEAU Cookbook
✓	edd60452-...	SELECT "287ec79d-633b-4e20-903d-22ef49"."C_CUSTKEY" AS "C_CUSTKEY", "287ec79...	TABLEAU Cookbook

Chapter 16: ETL Best Practices for Tableau







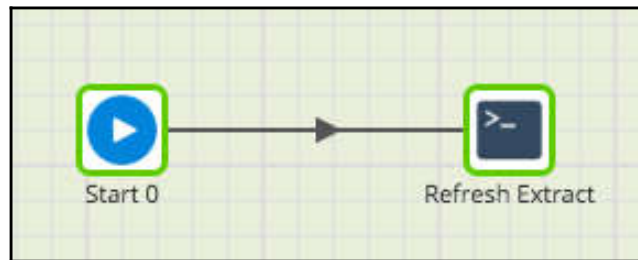
Download Files

Windows

- [TableauServerTabcmd-64bit-2018-2-2.exe \(86 MB\)](#)
- [TableauServer-64bit-2018-2-2.exe \(1460 MB\)](#)

Linux

- [tableau-tabcmd-2018-2-2.noarch.rpm \(5 MB\)](#)
- [tableau-tabcmd-2018-2-2_all.deb \(5 MB\)](#)
- [tableau-server-2018-2-2.x86_64.rpm \(1296 MB\)](#)
- [tableau-server-2018-2-2_amd64.deb \(1299 MB\)](#)



	Revalidate Job (FPS VPC)	Ctrl+R
	Run Job (FPS VPC)	Ctrl+Enter
	Run Job In Another Environment	
	Schedule Job	
	Manage Variables	
	Manage Grid Variables	
	Export	
	Close Job	
	Create Note	
	Extract To New Job	
	Undo Set Parameter	Ctrl+Z
	Redo	Shift+Ctrl+Z
	Copy	Ctrl+C
	Paste	Ctrl+V

Manage Job Variables

Name	Type	Behaviour	Visibility	Value		
+ data_source_name	Text	Copied	Public		↗	✕
+ project_name	Text	Copied	Public		↗	✕
+ tableau_host	Text	Copied	Public		↗	✕

+ Text Mode

OK

Refresh 1

Tableau f

- Open Job Enter
- ✕ Close Job
- ↗ Manage Job
- 📄 Duplicate Job Ctrl+D
- 🗑 Delete Job Delete
- ▶ Run ▶
- 📄 Variables ▶
- 📄 Add Orchestration Job
- 📄 Add Transformation Job
- 🕒 Schedule Job
- 🕒 Task History
- ↩ Generate Shared Job
- 📄 Generate Job Documentation
- ↓ Export

