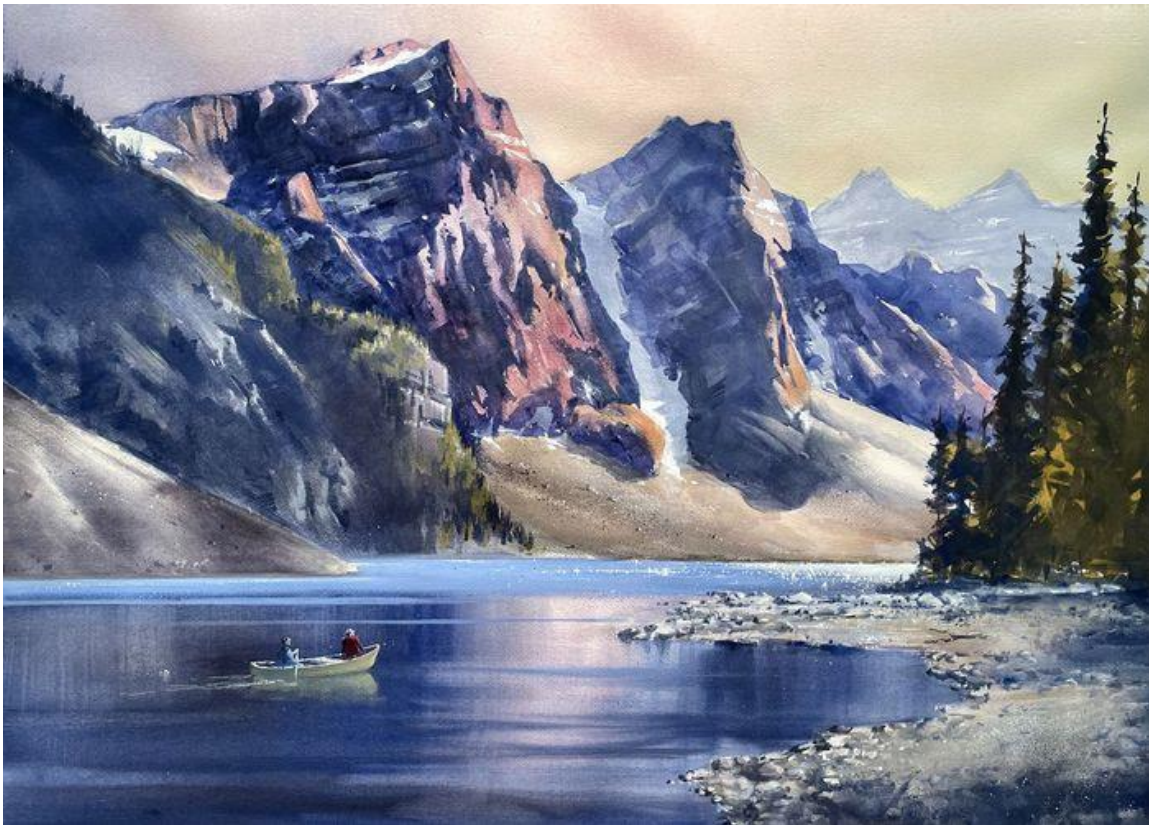


DR. ALVIN'S PUBLICATIONS

LEARNING TABLEAU PART VI

DENGUE CASES & PRODUCT SALES STORY
DR. ALVIN ANG



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I. RELATIONSHIP BETWEEN CO2 AND DENGUE CASES IN SINGAPORE

- Data Source can be found here: https://www.alvinang.sg/s/World_Bank_CO2.xlsx
- <https://www.alvinang.sg/s/surface-air-temperature-monthly-mean.csv>
- <https://www.alvinang.sg/s/dengue-clusters-kml.kml>
- <https://www.alvinang.sg/s/dengue-outbreak-statistics.csv>
- There is an increase in dengue cases in Singapore over the past few decades.
- This could be related to the rise in temperature due to climate change.
- Since CO2 is known to cause global warming, could then the rise of Singapore's CO2 level lead to the rise of dengue?
- That is... is there a correlation between
 - Singapore's emission of CO2 → Increase in Singapore's temperature → Increase of Dengue Cases?

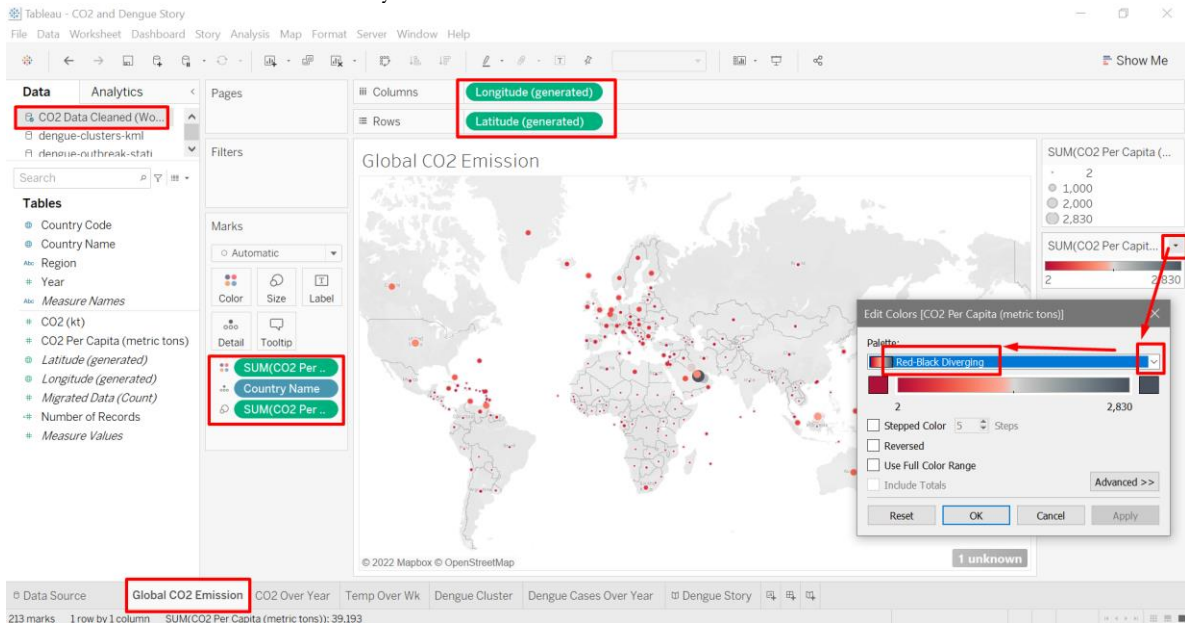
A. GLOBAL CO2 EMISSION

- First, we bring in the World Bank CO2.xls → CO2 Data Cleaned worksheet

The screenshot shows the Tableau interface for a data source named 'World_Bank_CO2'. The 'Connections' pane on the left lists 'World_Bank_CO2' as a Microsoft Excel source. The 'Sheets' pane shows a list of worksheets, with 'CO2 Data Cleaned' selected. The main view displays the 'Migrated Data' table, which contains 6 fields and 11127 rows. The table structure is as follows:

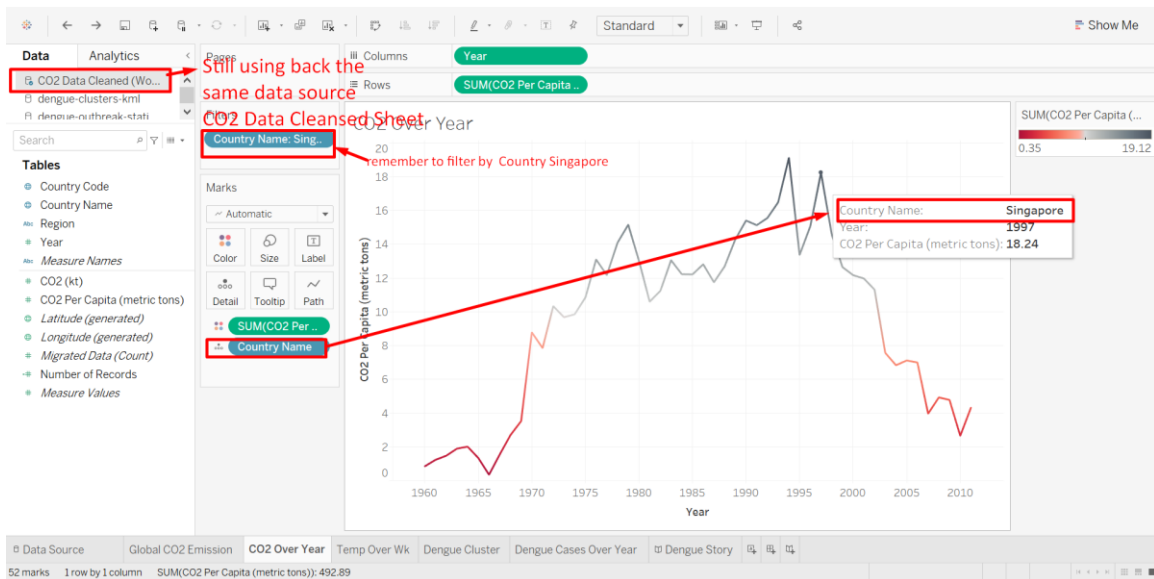
Name	Country Code	Country Name	Region	Year
ABW	Aruba	Latin America & Caribbean	1960	
ABW	Aruba	Latin America & Caribbean	1961	
ABW	Aruba	Latin America & Caribbean	1962	
ABW	Aruba	Latin America & Caribbean	1963	

- Next, we bring in the columns and rows and change the color.
- We see the CO2 emissions by countries.

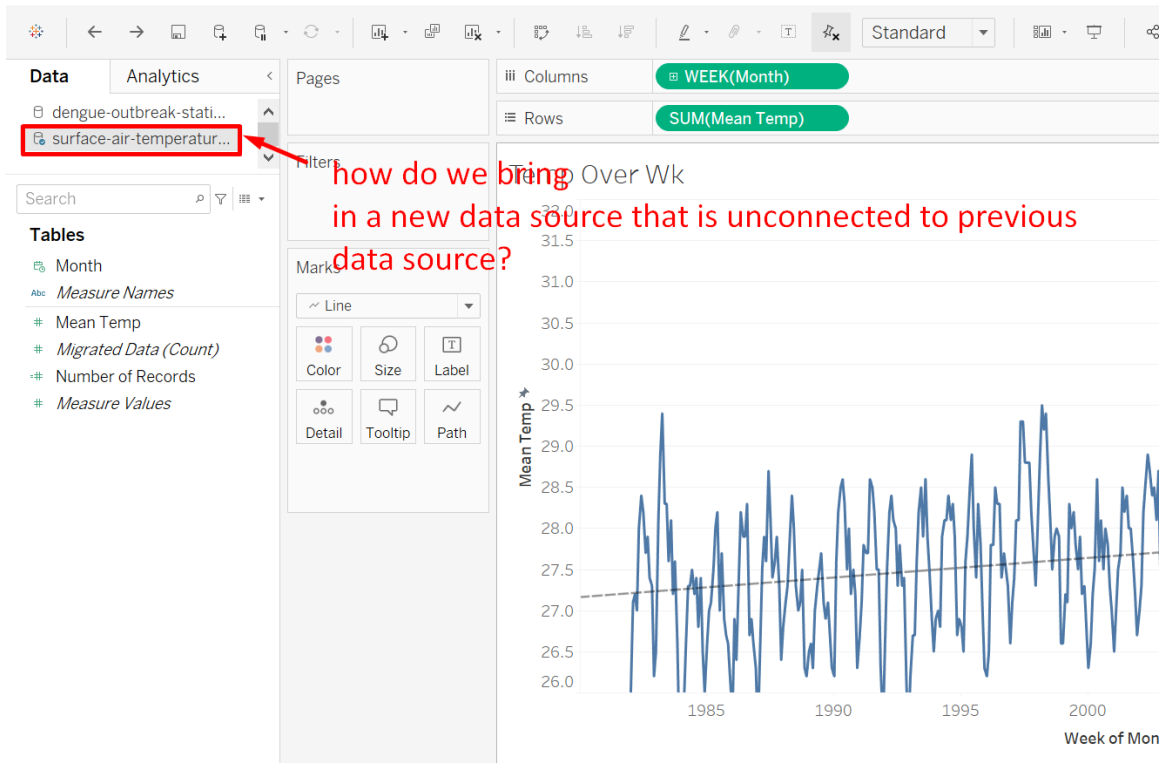


B. SINGAPORE'S CO2 EMISSION

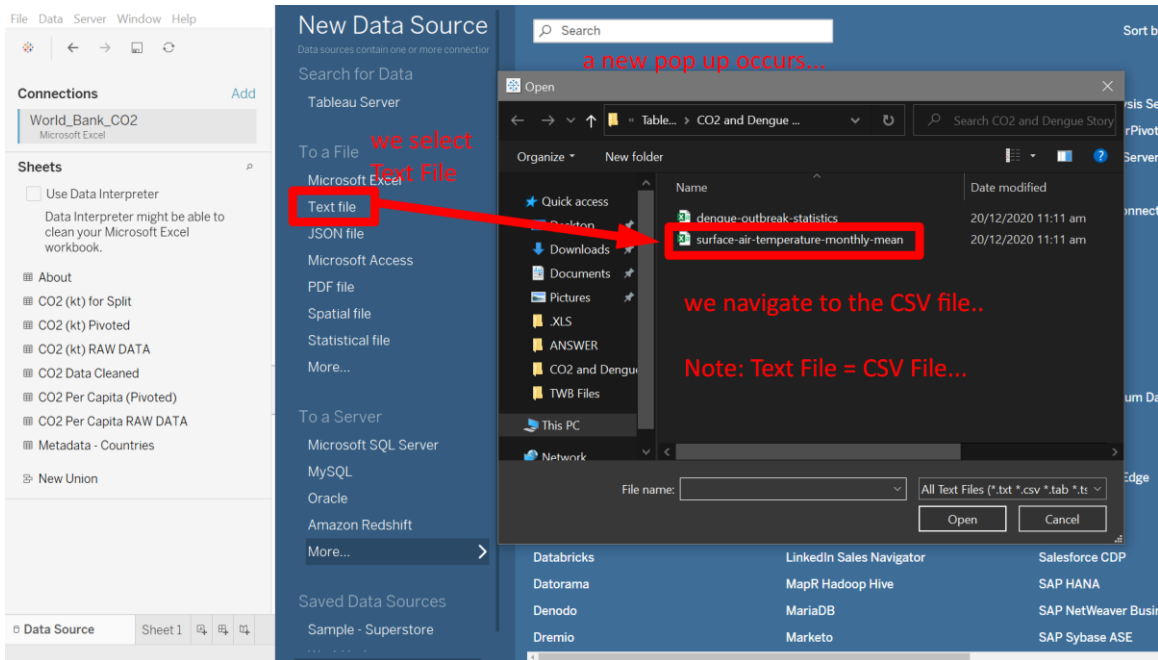
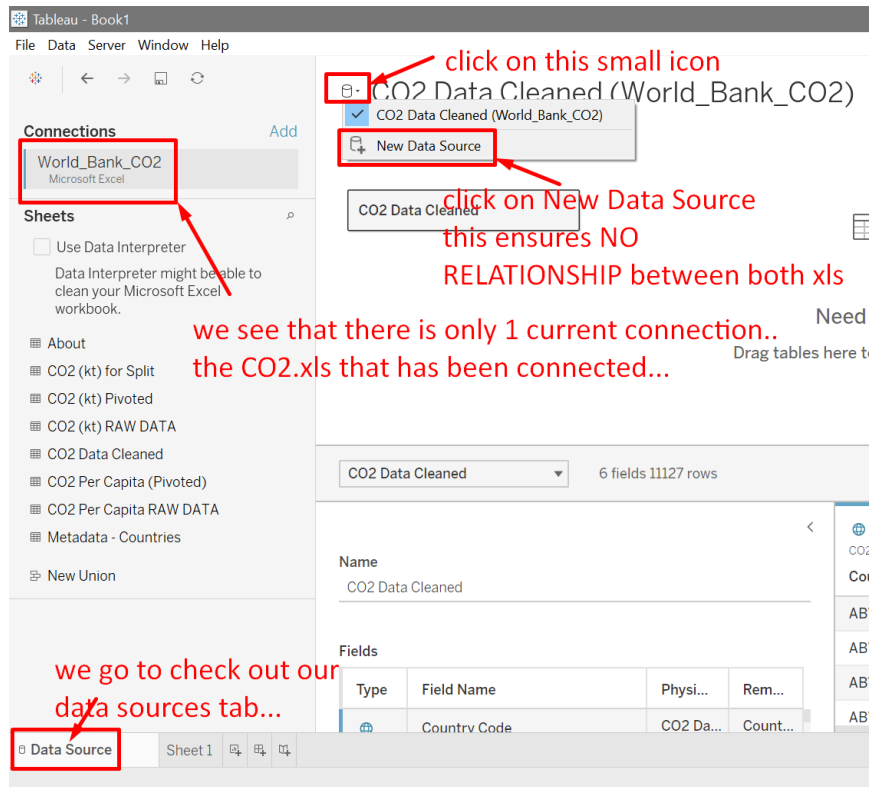
- We observe that Singapore's CO2 emission is declining in the recent years....
- (we are still using back the same data source)...

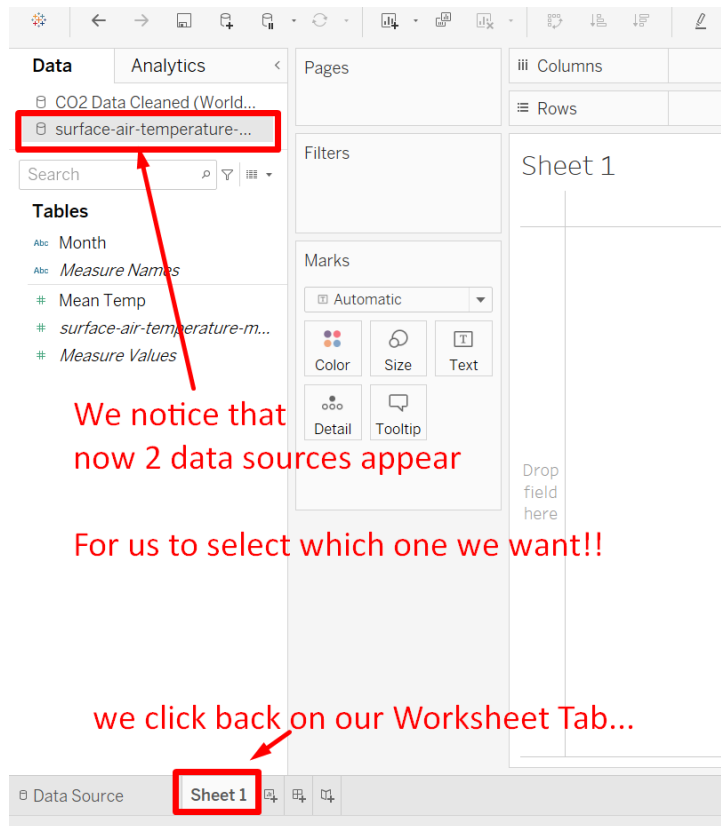
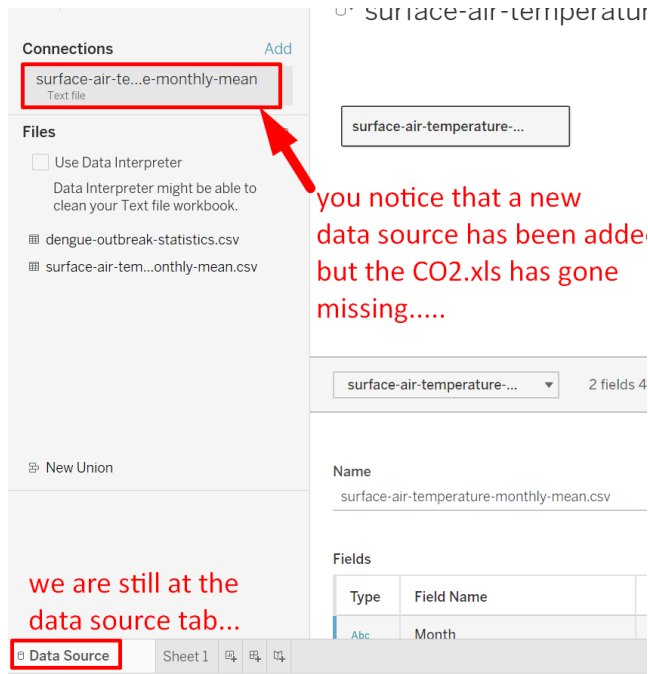


C. BRINGING IN A SEPARATE NEW DATA SOURCE



- Previously, we brought in this: https://www.alvinang.sg/s/World_Bank_CO2.xlsx and connected it to tableau (in order to understand the CO2 emissions).
- Now, we want to study <https://www.alvinang.sg/s/surface-air-temperature-monthly-mean.csv> but it cannot be connected / have a relationship / joined to the previous .xls; meaning it has got to be a totally separate data source.
- We do the following steps:

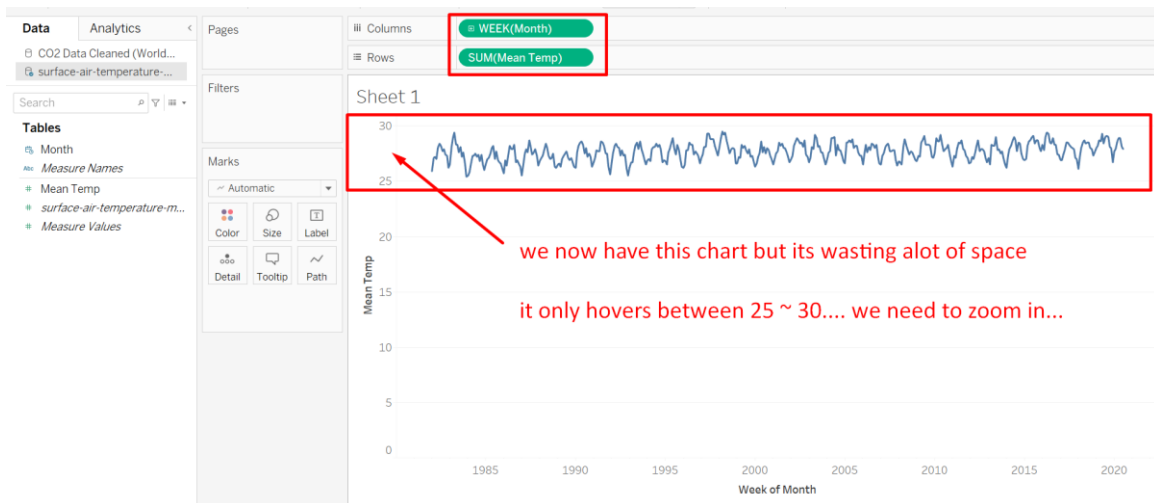
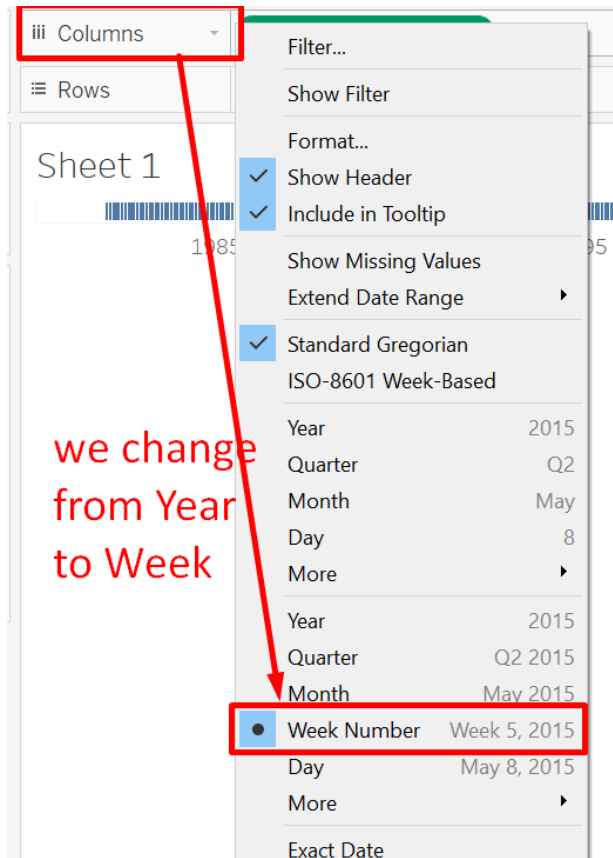




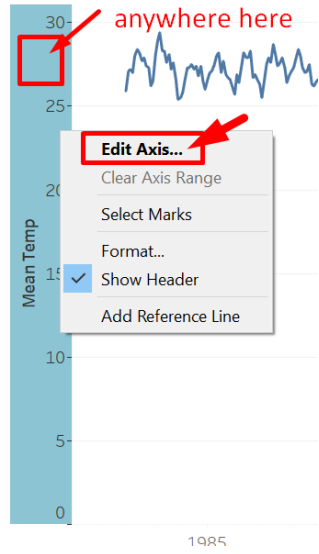
D. ANALYSING SURFACE AIR TEMPERATURE

The screenshot shows a data analysis tool interface. On the left, under the 'Data' tab, there are two tables: 'CO2 Data Cleaned (World...)' and 'surface-air-temperature-...'. Below this is a search bar and a 'Tables' section. In the 'Tables' section, a table named 'Month' is highlighted. A context menu is open over the 'Month' table, showing options like 'Duplicate', 'Rename', 'Hide', 'Create', 'Transform', 'Convert to Continuous', 'Change Data Type', 'Default Properties', 'Group by', 'Folders', 'Hierarchy', 'Replace References...', and 'Describe...'. The 'Change Data Type' option is selected, and a sub-menu is open showing options: 'Number (decimal)', 'Number (whole)', 'Date & Time', 'Date', 'String', 'Spatial', 'Boolean', and 'Default'. The 'Date & Time' option is selected in the sub-menu. Red boxes highlight the 'Month' table, the 'Change Data Type' option, and the 'Date & Time' option. A red text overlay on the left side of the screenshot reads: 'we need to change the data type of Month from String to Date and Time'.

we need to change the data type of Month from String to Date and Time



Sheet 1 right click



Edit Axis [Mean Temp] ×

General Tick Marks

Range

Automatic Include zero

Uniform axis range for all rows or columns

Independent axis ranges for each row or column

Fixed

Fixed start Fixed end

25 30

Scale

Reversed

Logarithmic

Positive Symmetric

Axis Titles

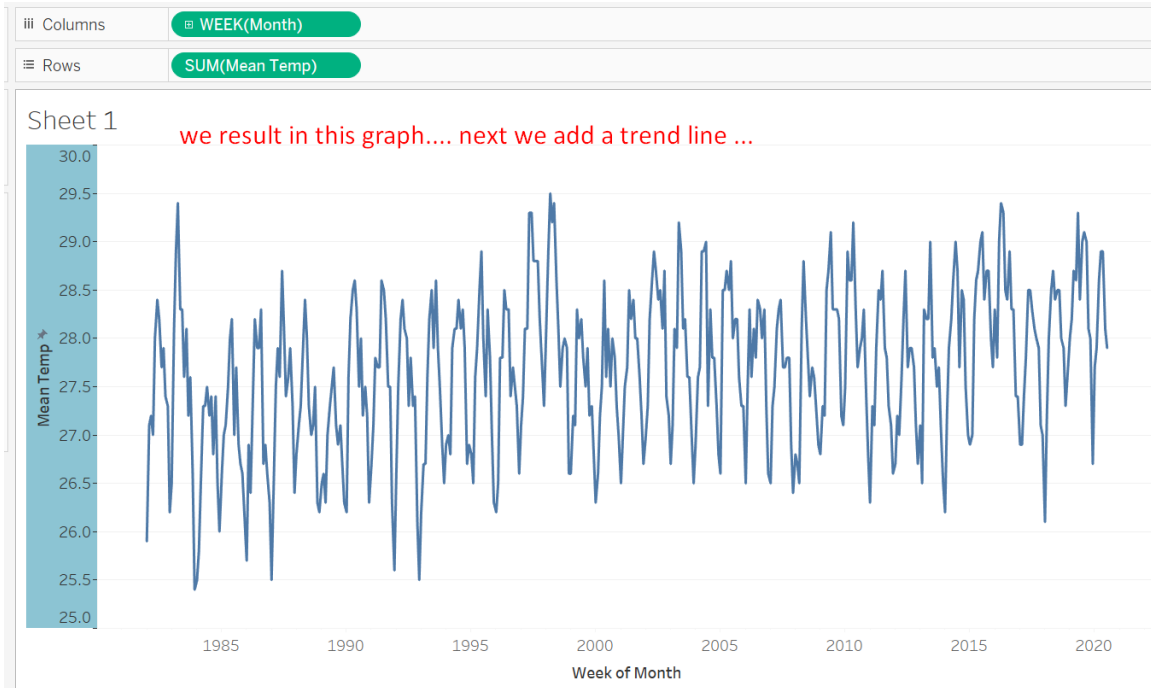
Title

Mean Temp

Subtitle

Subtitle Automatic

↶ Reset



Data **Analytics** < Pages

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

Columns: WEEK(Month)
Rows: SUM(Mean Temp)

Sheet 1

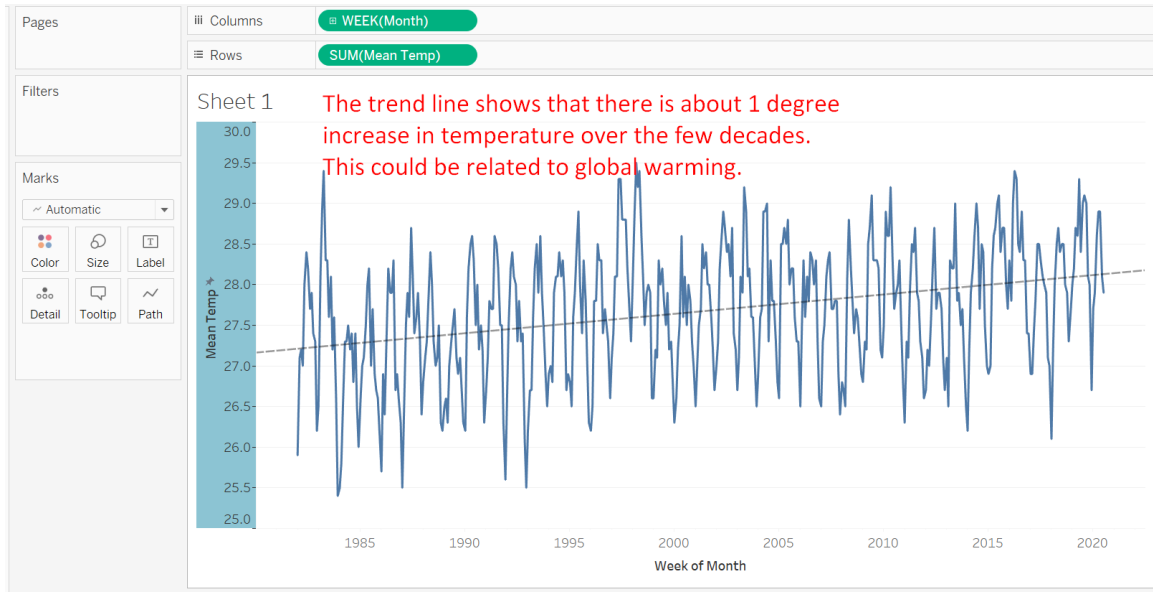
drag the trend line into the chart... place into Linear...

Add a Trend Line

- Linear**
- Logarithmic
- Exponential
- Polynomial
- Power

Mean Temp *

Week of Month



E. DENGUE CLUSTER MAP

File Data Server Window Help

Connections: surface-air-te...e-monthly-mean (Text file)

Files: dengue-outbreak-statistics.csv, surface-air-tem...onthly-mean.csv

surface-air-temperature-monthly-mean (CO2 Data Cleaned (World_Bank_CO2))

surface-air-temperature-monthly-mean

New Data Source

surface-air-temperature-...

surface-air-temperature-... 2 fields 463 rows

Name: surface-air-temperature-monthly-mean.csv

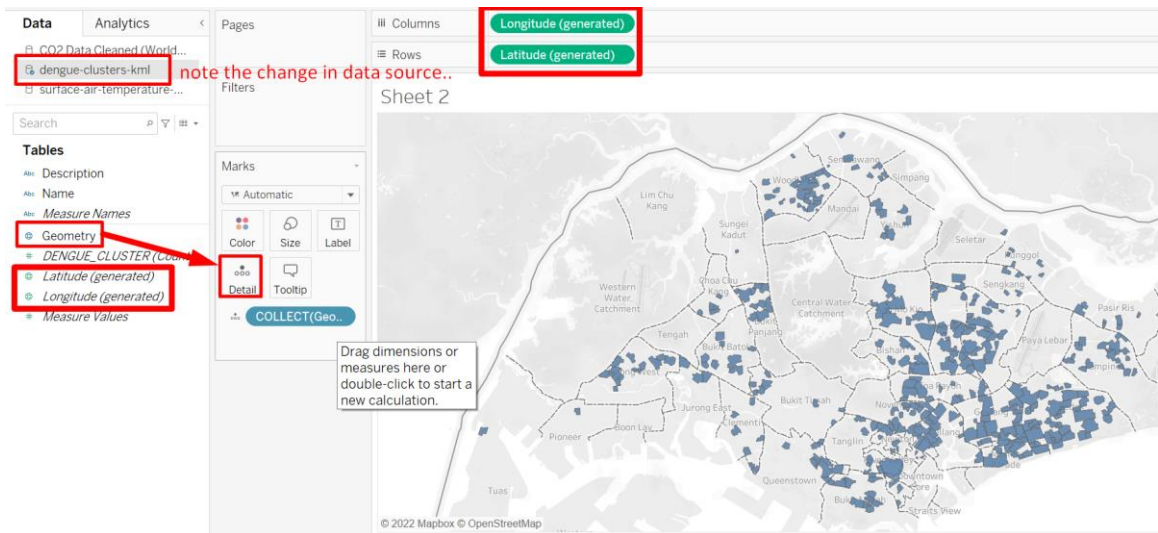
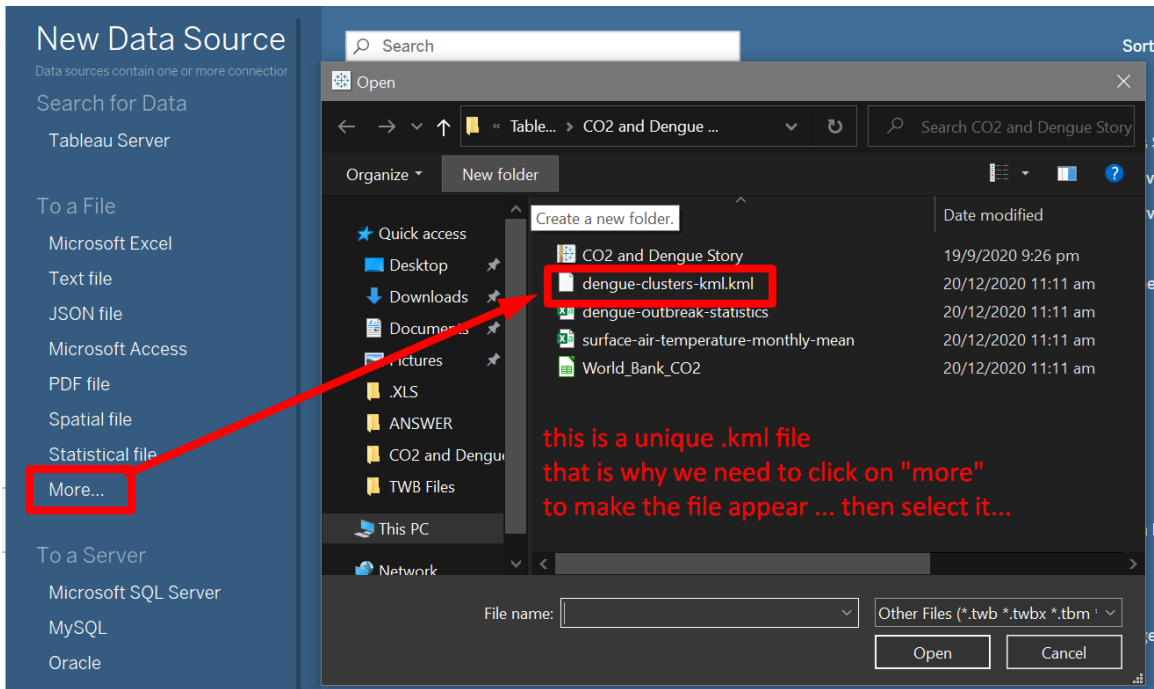
Type	Field Name	Physi...
	Month	surface...

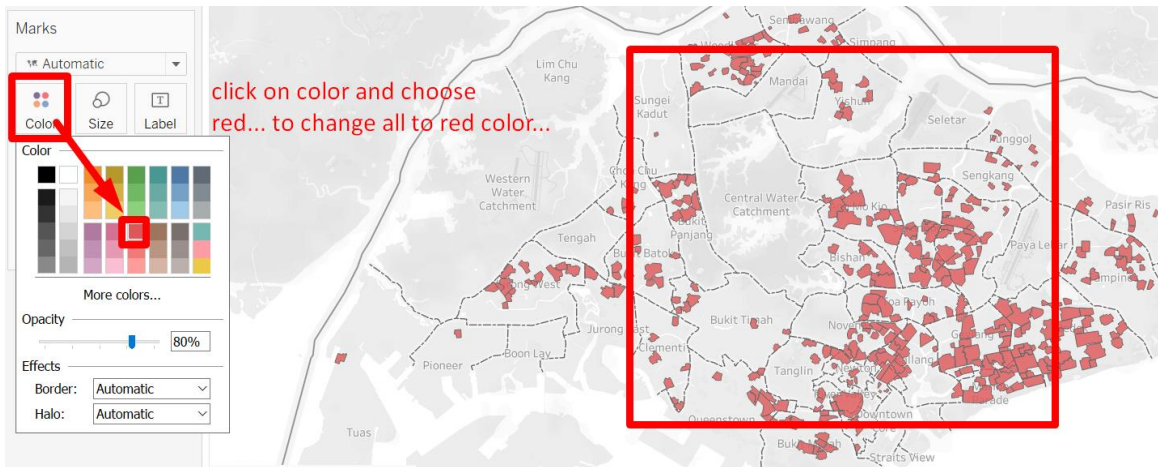
Data Source

Sheet 1 Sheet 2

we have already brought in 2 data sources (one xls and one csv) (they are independent and unrelated to each other)

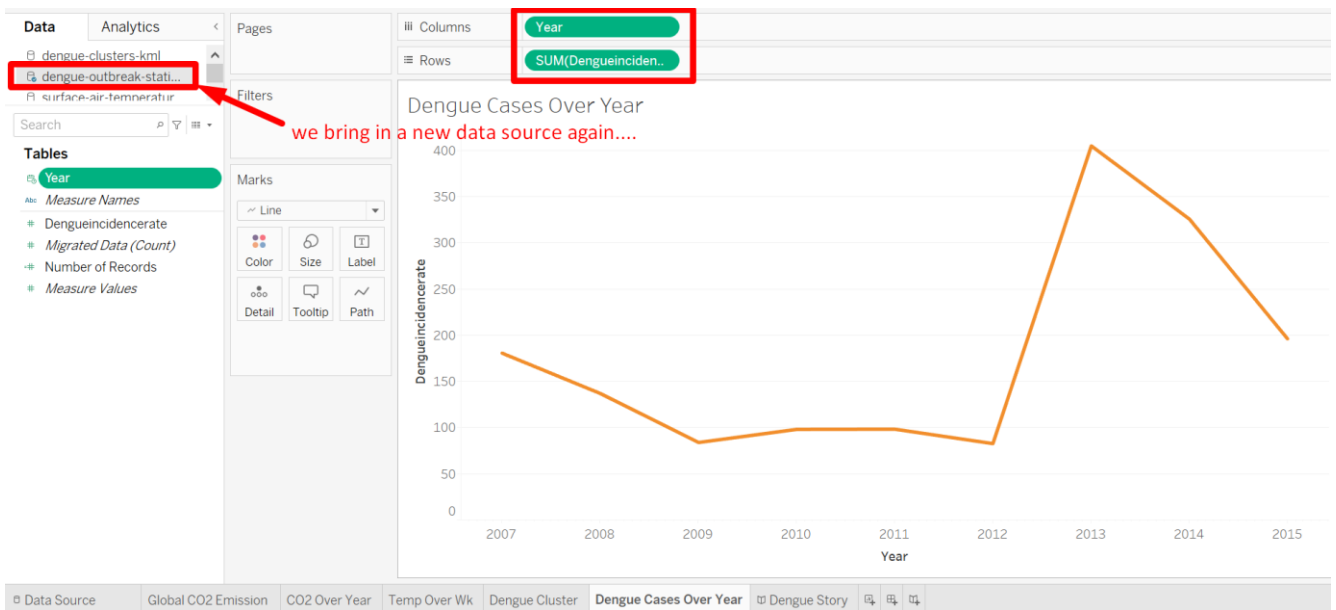
now we need to bring in one more...





F. DENGUE CASES OVER YEARS

- We bring in a new data source: <https://www.alvinang.sg/s/dengue-outbreak-statistics.csv>



II. PRODUCT SALES STORY

A. DATA SOURCE

Files can be found here:

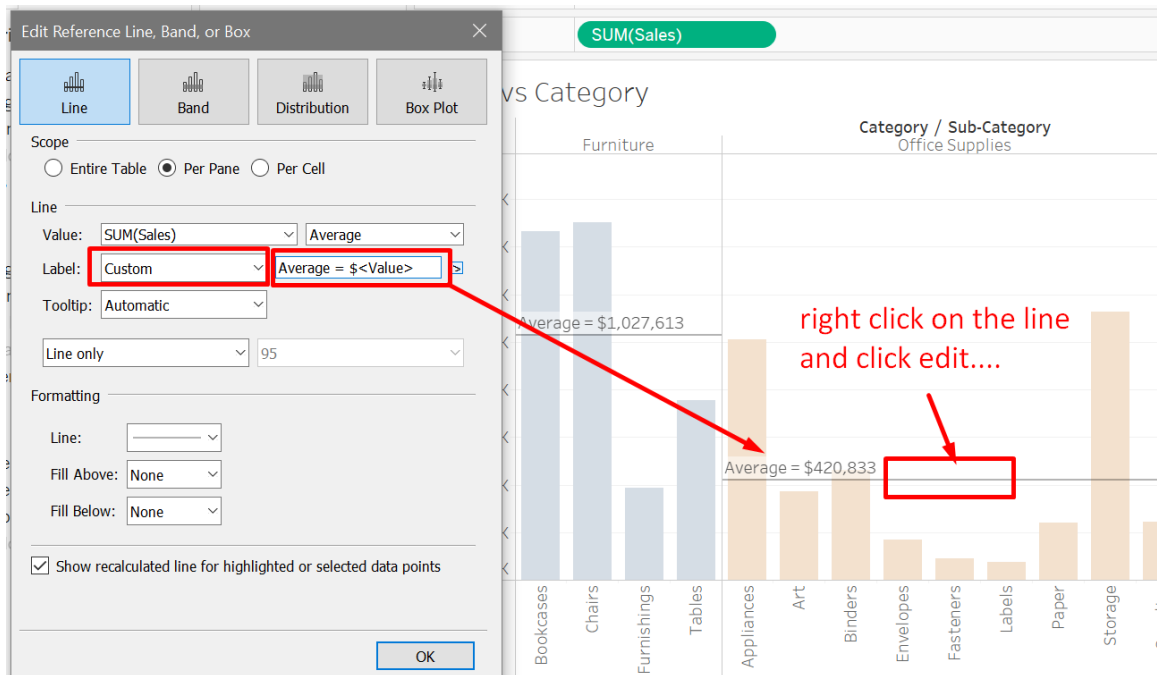
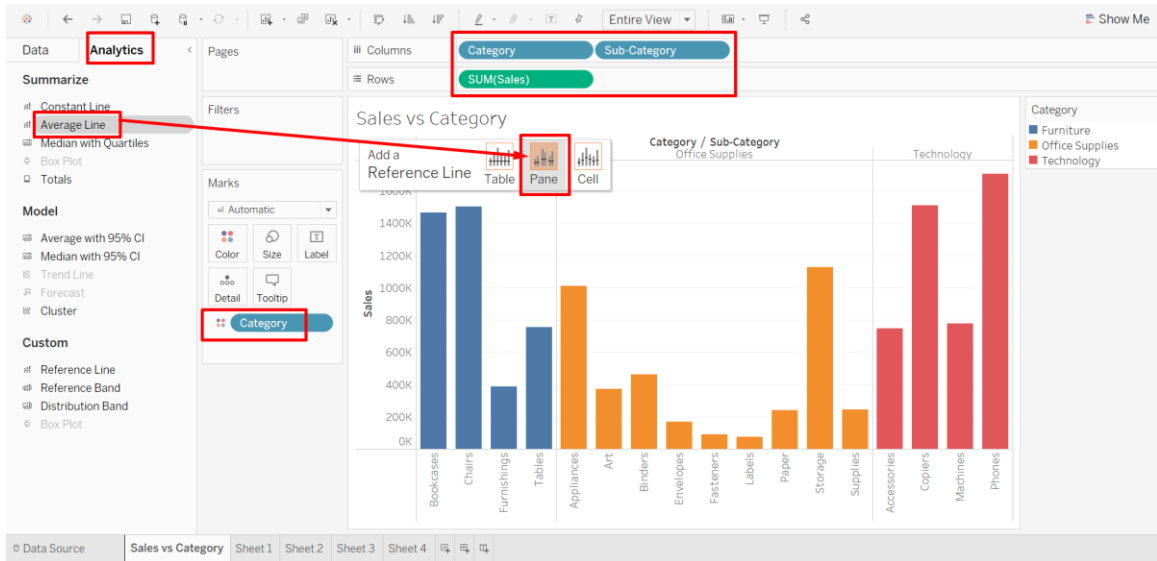
<https://www.alvinang.sg/s/Sales-2016.xlsx>

<https://www.alvinang.sg/s/Products-2016.xlsx>

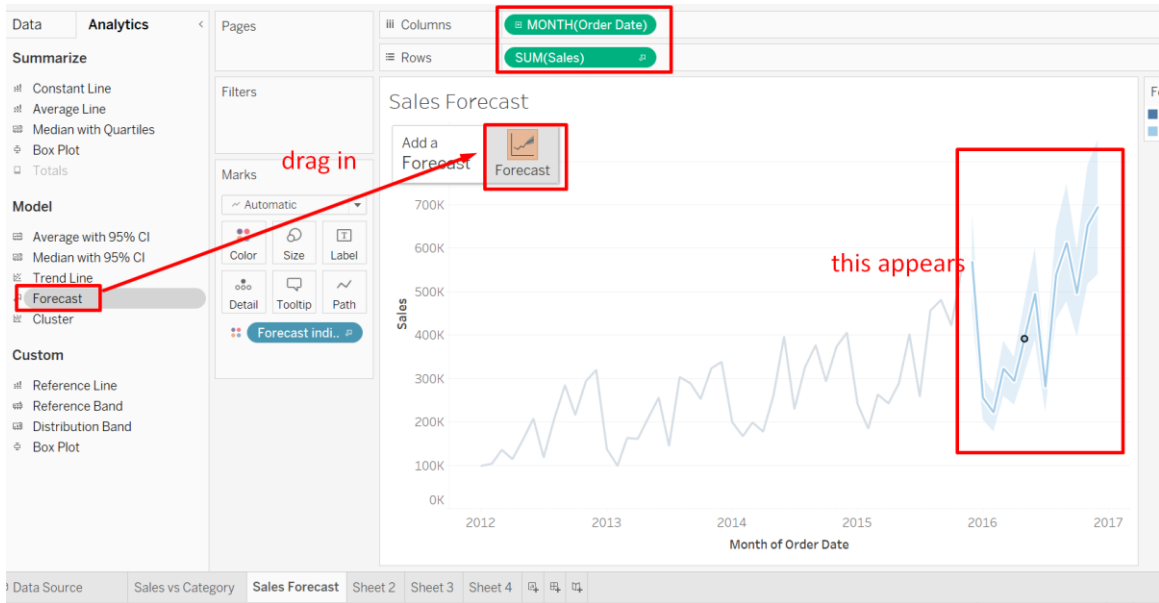
The screenshot displays a data tool interface. On the left, the 'Connections' pane lists 'Sales 2016' (Microsoft Excel) and 'Products 2016' (Text file), both highlighted with a red box. Below it, the 'Files' pane shows 'Products 2016.csv' and a 'New Union' button. The main workspace, titled 'Sheet1+ (Multiple Connections)', shows a join diagram between 'Sheet1' and 'Products 2016.csv', also highlighted with a red box. A 'Join' dialog box is open, showing 'Inner' join selected with a red box. The dialog shows a join condition: 'Product ID = Product ID...'. Below the diagram, a dropdown menu shows 'Sheet1' selected, with '12 fields 51290 rows' displayed. At the bottom, a data preview table is shown:

#	Abc
Row ID	Order ID
1	MX-2015-SC205

B. SALES VS CATEGORY: AVERAGE LINES



C. SALES FORECAST



right click anywhere on the forecast line

just leave the preset as is...

already set to 1 year forecast

D. SALES VS MARKET: COLOR BY ASIA

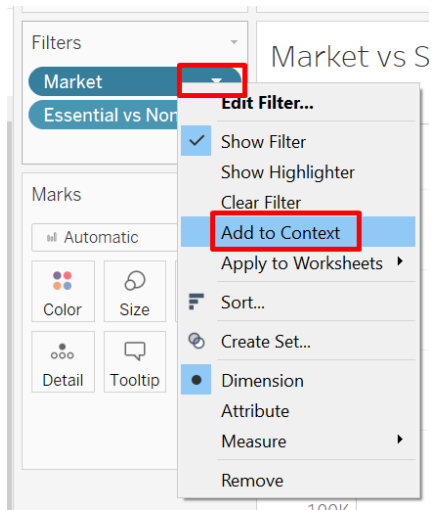
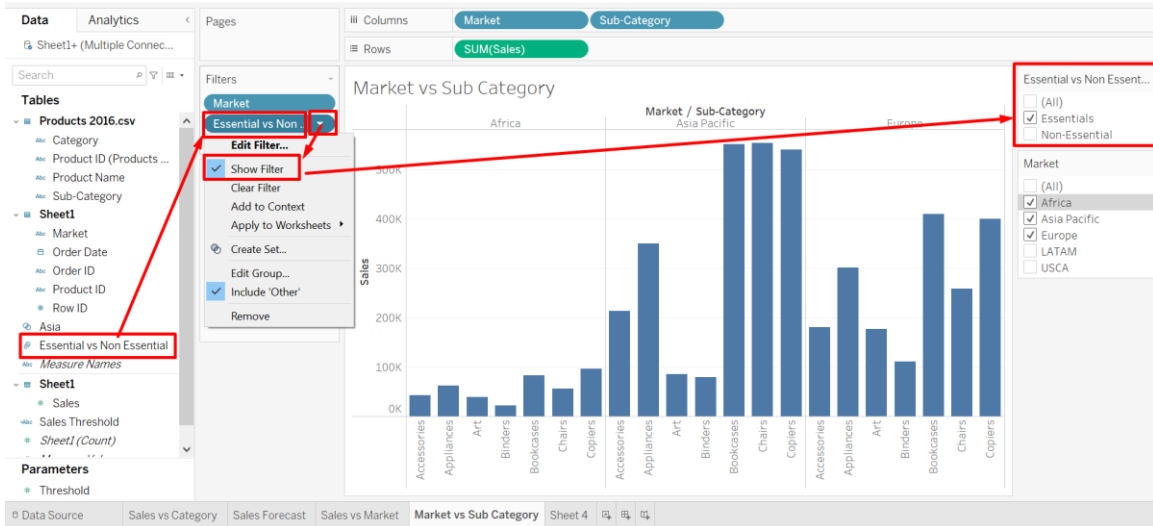
The image illustrates the steps to create a set in Tableau and apply it to a visualization. The top part shows the 'Create Set' dialog box where 'Asia' is selected from a list of regions. The bottom part shows the main Tableau interface where the 'Market' field is on the Columns shelf, 'SUM(Sales)' is on the Rows shelf, and 'IN/OUT(Asia)' is on the Marks shelf. A bar chart titled 'Sales vs Market' is displayed, with bars colored by the 'IN/OUT(Asia)' set. A legend on the right indicates that 'In' is represented by a blue square and 'Out' by a grey square.

Market	Sales	Color
Africa	~800K	Out (Grey)
Asia Pacific	~4000K	In (Blue)
Europe	~3300K	Out (Grey)
LATAM	~2200K	Out (Grey)
USCA	~2400K	Out (Grey)

E. MARKET VS SUB CATEGORY: ESSENTIAL ITEMS

The image shows two parts of the Tableau interface. On the left, a context menu is open over the 'Sub-Category' field in the 'Columns' shelf. The 'Group...' option is highlighted with a red box. A red arrow points to the 'Sub-Category' field with the text 'right click here'. On the right, the 'Edit Group [Essential vs Non Essential]' dialog box is open. The 'Field Name' is 'Essential vs Non Essential'. The 'Groups' list shows 'Essentials' (with sub-items: Accessories, Appliances, Art, Binders, Bookcases, Chairs, Copiers) and 'Non-Essential' (with sub-item: Envelopes). A red box highlights the 'Essentials' group, and a red arrow points to it with the text 'these are essential "others" are all non essential'. The 'Add to' dropdown is set to 'Essentials'. The 'OK' button is highlighted with a red box.

The image shows the Tableau interface with a bar chart titled 'Market vs Sub Category'. The chart displays sales data for various sub-categories across three markets: Africa, Asia Pacific, and Europe. The y-axis represents 'Sales' from 0K to 500K. The x-axis lists sub-categories: Appliances, Binders, Chairs, Envelopes, Furnishings, Machines, Phones, Supplies, and their respective sub-categories. A red box highlights the 'Market' filter in the 'Columns' shelf. Another red box highlights the 'Market' filter in the 'Filters' shelf. A red arrow points from the 'Market' filter in the 'Columns' shelf to the 'Market' filter in the 'Filters' shelf. A third red box highlights the 'Market' filter in the 'Filters' shelf, with a red arrow pointing to the 'Market' filter in the 'Columns' shelf. The 'Market' filter in the 'Filters' shelf is set to 'Africa', 'Asia Pacific', and 'Europe'. The 'Market' filter in the 'Columns' shelf is set to 'Market' and 'Sub-Category'. The 'SUM(Sales)' measure is highlighted in the 'Rows' shelf.



F. SALES VS PRODUCT ID: THRESHOLD

choose create Parameter

Create Calculated Field

IF SUM([Sales]) > [Threshold]
THEN "HIGH"
ELSE "Low"
END

The calculation is valid. 1 Dependency

**note make sure that the "Threshold Current Value" is at 5000 plus... to prevent the "Calculated field" from showing "HIGH" only....

right click

AGG(Sales Thres...)

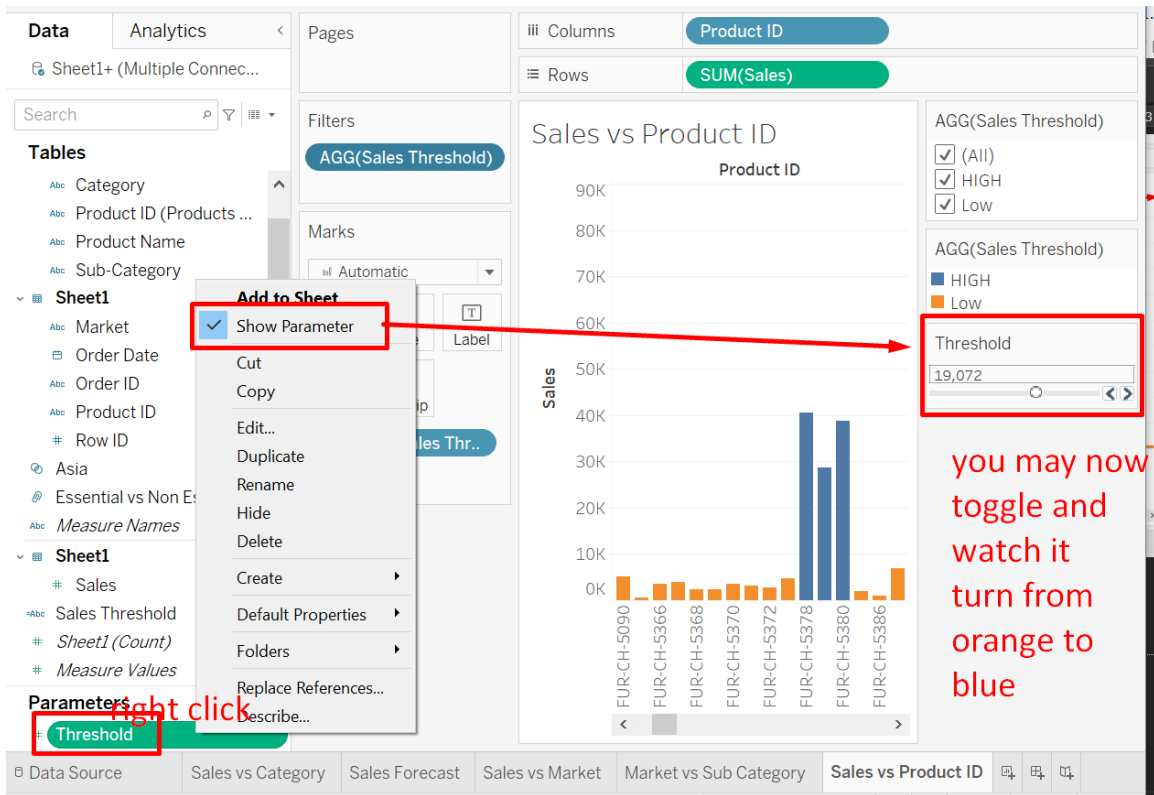
Product ID

AGG(Sales Threshold)

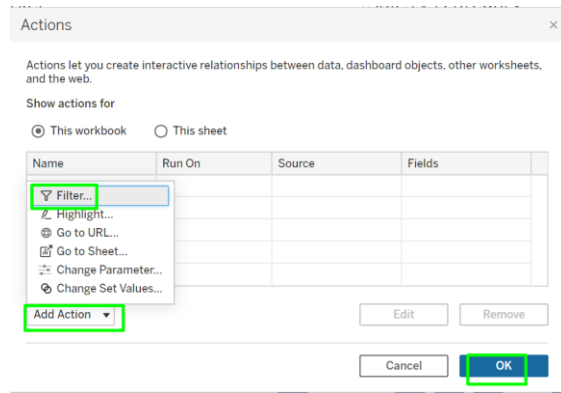
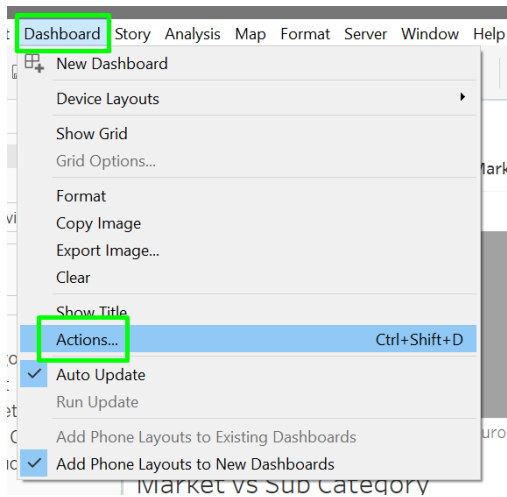
AGG(Sales Threshold)

Threshold

19,072



G. DASHBOARD FILTERING



Add Filter Action

Name: **Filter1** Insert ▾

Source Sheets: **Sales Story** Run action on

Market vs Sub Category
 Sales vs Category
 Sales vs Market

Hover
 Select
 Menu
 Single-select only

Target Sheets: **Sales Story** Clearing the selection will

Market vs Sub Category
 Sales vs Category
 Sales vs Market

Keep filtered values
 Show all values
 Exclude all values

Filter: All fields Selected fields

<input type="checkbox"/>	Source Field	Target Data Source	Target Field
<input type="checkbox"/>	Click to add ▾		

Remove

Cancel **OK**

Actions

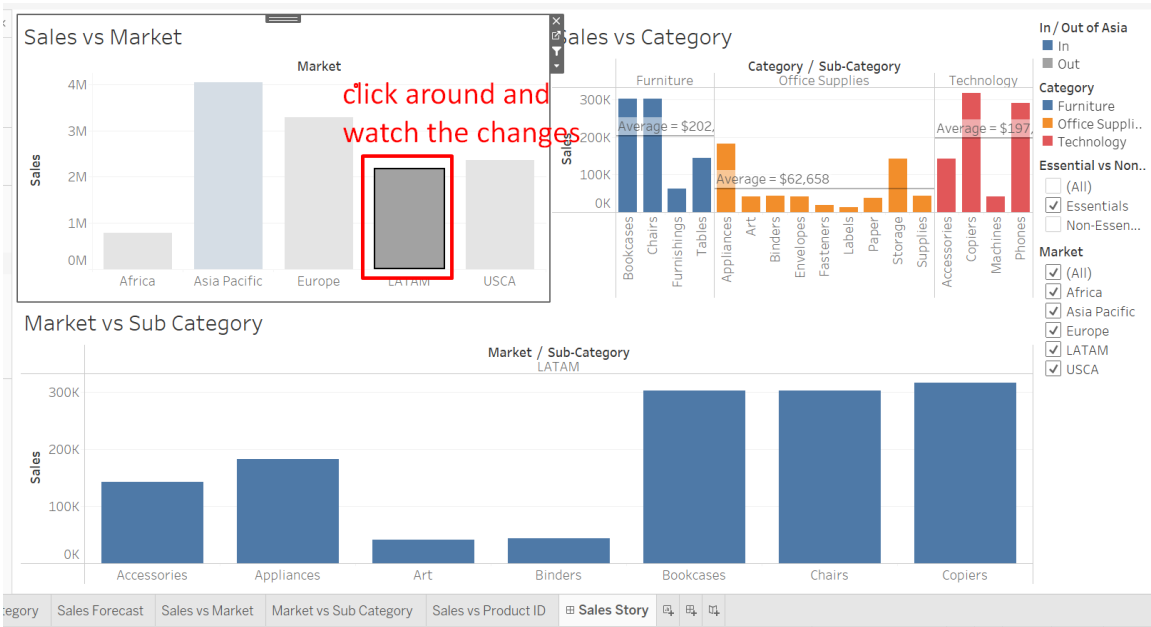
Actions let you create interactive relationships between data, dashboard objects, other worksheets, and the web.

Show actions for: This workbook This sheet

Name	Run On	Source	Fields
Filter1	Select	Sales Story (Sales vs ...	All

Add Action ▾ Edit Remove

Cancel **OK**



III. ABOUT THE AUTHOR



ABOUT DR. ALVIN ANG

Dr. Alvin Ang earned his Ph.D., Masters and Bachelor degrees from NTU, Singapore. He was a previously a Professor, Scientist and Financial Consultant. Currently, he owns multiple self-started businesses and is a Personal/Business Advisor.

More about him at www.AlvinAng.sg