

Data Storytelling – Tableau Workshop I DAY 2 pm

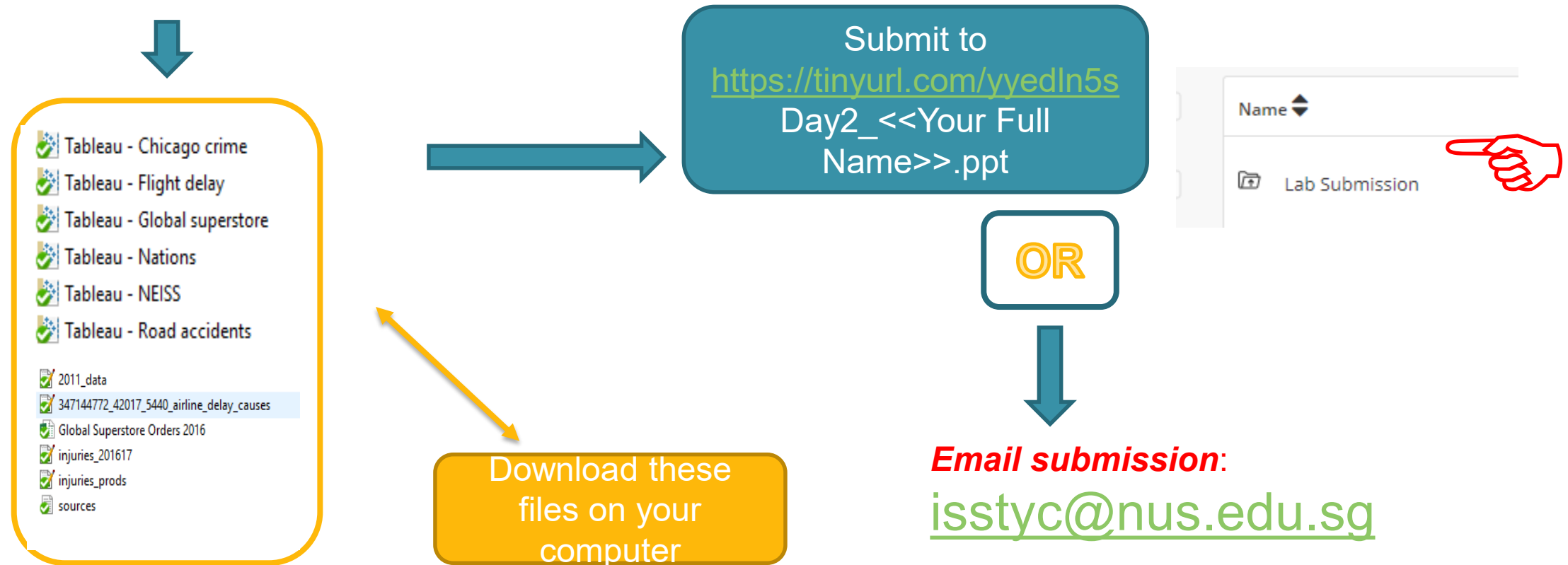
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Learning Objectives

- Familiarise with using charts as building blocks in Tableau
- Practicalities of charting

Material Download (<https://tinyurl.com/yyedln5s>)

Day 2 and 3 workshop material



Email submission:
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Note: Same steps for day-3 submissions

Data visualization is regularly promoted for its ability to reveal stories within data, yet these “data stories” differ in important ways from traditional forms of storytelling.

Storytellers, especially online journalists, have increasingly been integrating visualizations into their narratives, in some cases allowing the visualization to function in place of a written story.

-Edward Segel and Jeffrey Heer

<http://vis.stanford.edu/files/2010-Narrative-InfoVis.pdf>

How to tell a (data) story?

- **Understand** the background, facts and impact of the case that you want to communicate. **Explore** the data.
- What do you want to communicate? A **concept or facts**? Ask questions round it.
- **Weave a story** around it. People remember stories not dry facts.
- **Use data**. Why data? Because you cannot argue with data (to a certain extent)
- **Use chart and visualisation**. Why? Because people remember pictures not words.

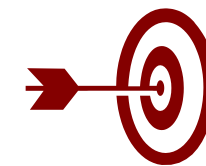
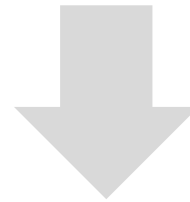
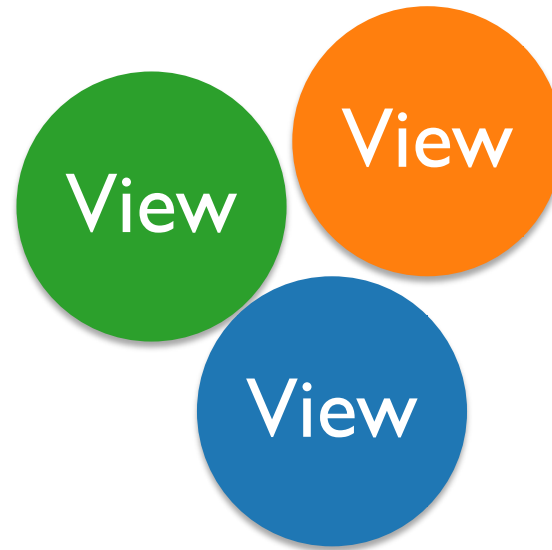
Guided Analytics

Tell your story.

Weaving the story.



- Trends
- Outliers
- Correlation







Your Point.

- Drill-in /through
- Filter
- Highlight
- Annotations
- URL

Reduce.

Intro to Tableau

- Tableau is a relatively 'easy' tool to do visualisations with 'click and drag'.
- Different Tableau products:

			
Tableau Desktop	Tableau Prep	Tableau Server	Tableau Online
Analytics anyone can use.	Data prep anyone can use.	Analytics for organizations.	Cloud analytics for organizations.
LEARN MORE →	LEARN MORE →	LEARN MORE →	LEARN MORE →

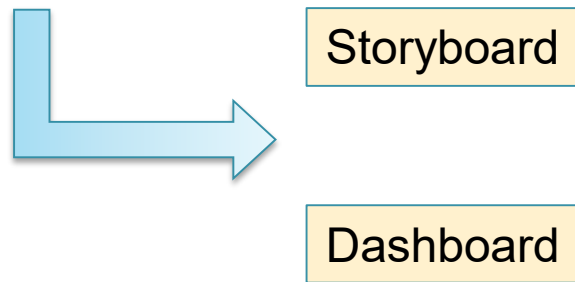
MORE TABLEAU PRODUCTS

Tableau Mobile	→
Tableau Public	→
Embedded Analytics	→
Developer Tools	→
Pricing	→

- Entry point: Tableau public (free)
 - But need to share data!

My own story (sequence) to you

- Tableau is a visualisation to platform for you to weave your story. Use it!
- This is the story sequence that we will use:
 - Building block - charts (built on top of 'what charts to use?')
 - From charts to:



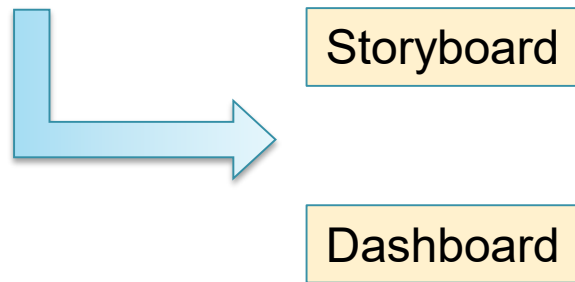
Storyboard vs Dashboard: what's the difference?

- Story board:

- Dashboard

My own story to you

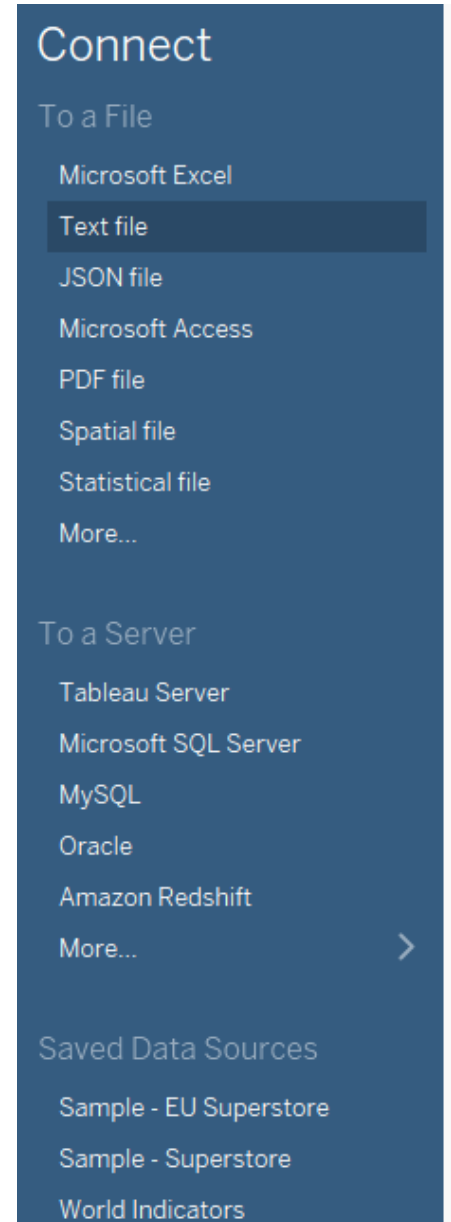
- Tableau is a visualisation to platform for you to weave your story. Use it!
- This is the story sequence that we will use:
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- Work backwards – the story determines the visualisation. Not the other way round.

First steps in Tableau

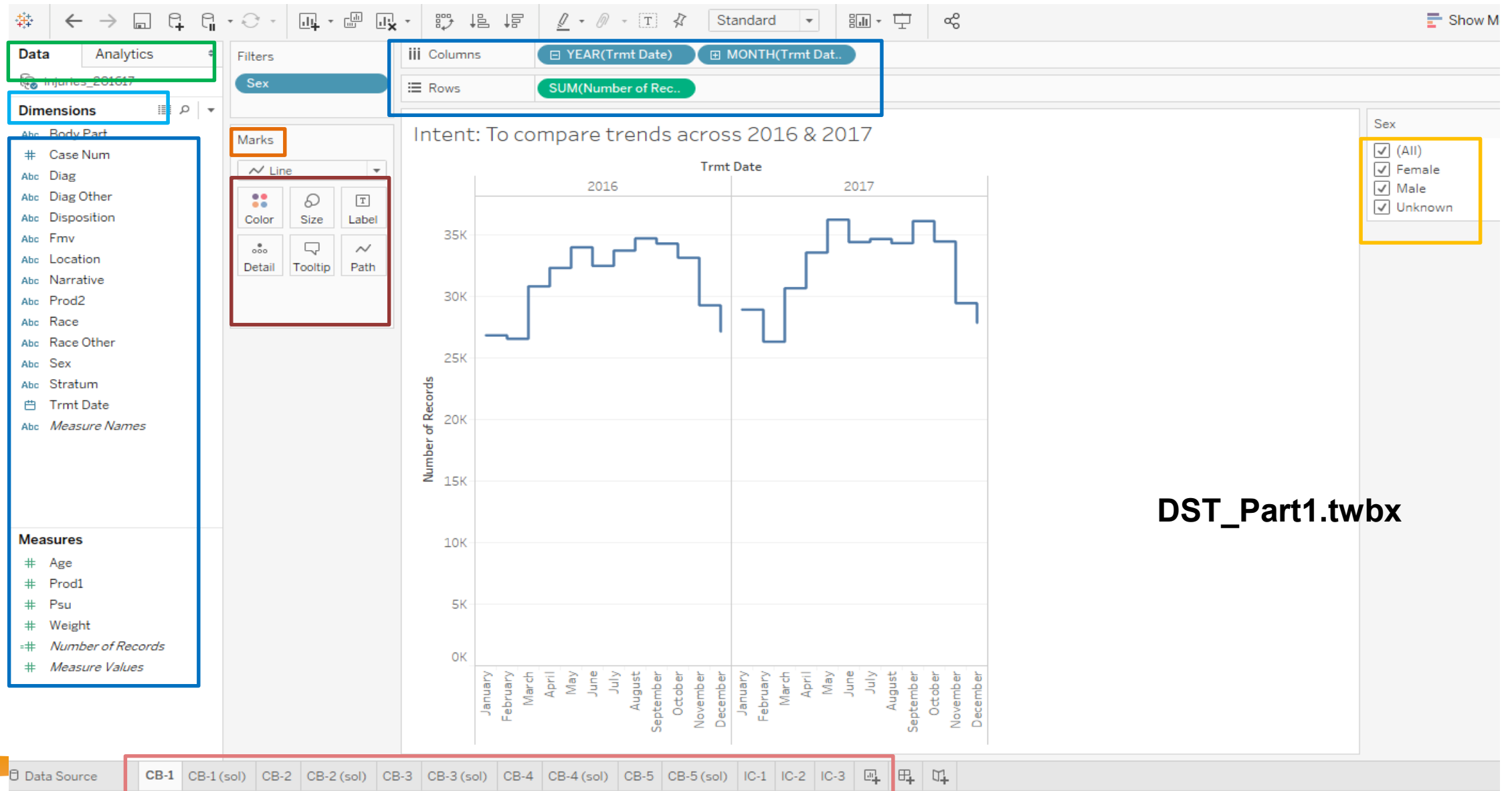
- First connect to the data set! Trivial. Tableau allows data format of different types. It also data relations across different data sets but we will not cover that.
- Explore the data. 'Listen' to the data speak to you. After that, tell its story
- Only thing you need to understand in Tableau is the concept of dimension and measure (again).



Dimensions and metrics

- Dimension is the basis that you partition the data into. It is usually of a *qualitative* nature (not always) and sometimes *hierarchical* in nature. Due to the dimensions, it allows you to slice and dice.
- The measures are almost *numerical* in nature. Due to the numerical nature, they can be averaged, summed up etc.
- Have you used the **pivot chart/ table** in excel? It is exactly the same concept! Tableau works on the concept of 'pivot chart' but allows more interactivity and many useful other features.
- Another useful feature of Tableau is it allows you to do **filter** on the dimensions.

Layout of a Tableau worksheet



DST_Part1.twbx

Example of data

View Data: injuries_201617

10,000 rows ☒ Show aliases

Copy Export All

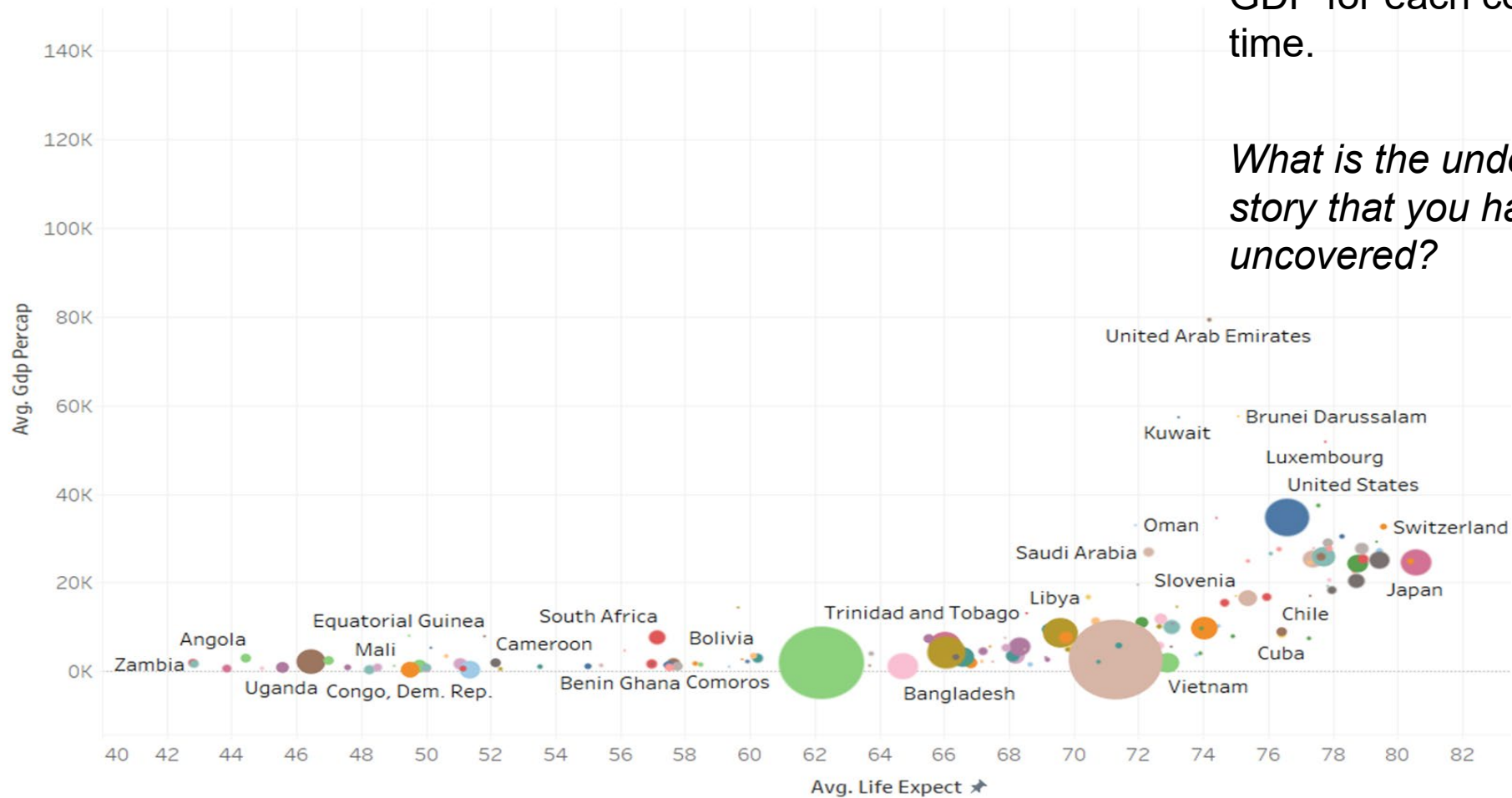
Body Part	Case Num	Diag	Diag Other	Disposition	Fmv	Location	Prod2	Race	Race Other	Sex	Stratum	Trmt Date	Age	Number of Records	Prod1	Psu	Weight
All Of Body	171237260	Anoxia	NA	Released	Fire dept attended	Home	NA	Black	NA	Female	C	15/12/2017	15.0000	1	1,866	31	4.7570
All Of Body	171058088	Anoxia	NA	Released	Fire dept attended	Home	NA	Not stated	NA	Female	C	15/10/2017	5.0000	1	1,866	37	4.7570
All Of Body	171103173	Anoxia	NA	Released	Fire dept attended	Home	NA	White	NA	Female	C	5/10/2017	15.0000	1	5,021	8	4.7570
25 - 50% Body	160345486	Burns, Thermal	NA	Admitted	Fire dept attended	Home	NA	Black	NA	Female	L	19/3/2016	50.0000	1	281	69	63.7429
All Of Body	180106474	Anoxia	NA	Died	Fire dept attended	Home	NA	Black	NA	Female	L	28/12/2017	2.0000	1	1,866	51	76.8114
All Of Body	180106511	Anoxia	NA	Died	Fire dept attended	Home	NA	Black	NA	Female	L	28/12/2017	19.0000	1	1,866	51	76.8114
All Of Body	180106505	Anoxia	NA	Died	Fire dept attended	Home	NA	Black	NA	Female	L	28/12/2017	27.0000	1	1,866	51	76.8114
All Of Body	180106502	Anoxia	NA	Died	Fire dept attended	Home	NA	Black	NA	Female	L	28/12/2017	37.0000	1	1,866	51	76.8114
All Of Body	171150336	Anoxia	NA	Released	Fire dept attended	Home	NA	Black	NA	Female	L	18/11/2017	5.0000	1	679	51	67.2099
All Of Body	171150334	Anoxia	NA	Released	Fire dept attended	Home	NA	Black	NA	Female	L	18/11/2017	6.0000	1	679	51	67.2099
All Of Body	171150337	Anoxia	NA	Released	Fire dept attended	Home	NA	Black	NA	Female	L	18/11/2017	8.0000	1	679	51	67.2099
All Of Body	171150335	Anoxia	NA	Released	Fire dept attended	Home	NA	Black	NA	Female	L	18/11/2017	24.0000	1	679	51	67.2099
All Of Body	180106504	Burns, Thermal	NA	Transferred	Fire dept attended	Home	NA	Black	NA	Female	L	28/12/2017	30.0000	1	1,866	51	76.8114
Lower Trunk	171246075	Laceration	NA	Transferred	Fire dept attended	Home	NA	Black	NA	Female	L	17/12/2017	50.0000	1	1,866	51	76.8114
All Of Body	171057312	Anoxia	NA	Admitted	Fire dept attended	Home	NA	Not stated	NA	Female	L	13/10/2017	57.0000	1	1,866	50	67.2099
All Of Body	171037746	Anoxia	NA	Released	Fire dept attended	Home	NA	Not stated	NA	Female	L	10/10/2017	19.0000	1	1,866	5	67.2099
All Of Body	171235360	Anoxia	NA	Released	Fire dept attended	Home	308	Other	ns	Female	L	13/12/2017	32.0000	1	712	42	76.8114
All Of Body	171244116	Anoxia	NA	Admitted	Fire dept attended	Home	NA	White	NA	Female	L	17/11/2017	73.0000	1	1,866	44	67.2099

Data set injuries_201617.csv records the number of home injuries and the details of each recorded injury

Layout of a Tableau worksheet

Nations.twbx

1999



This worksheet tells the story of how avg life expectancy and the GDP for each country varies over time.

What is the underlying story that you have uncovered?

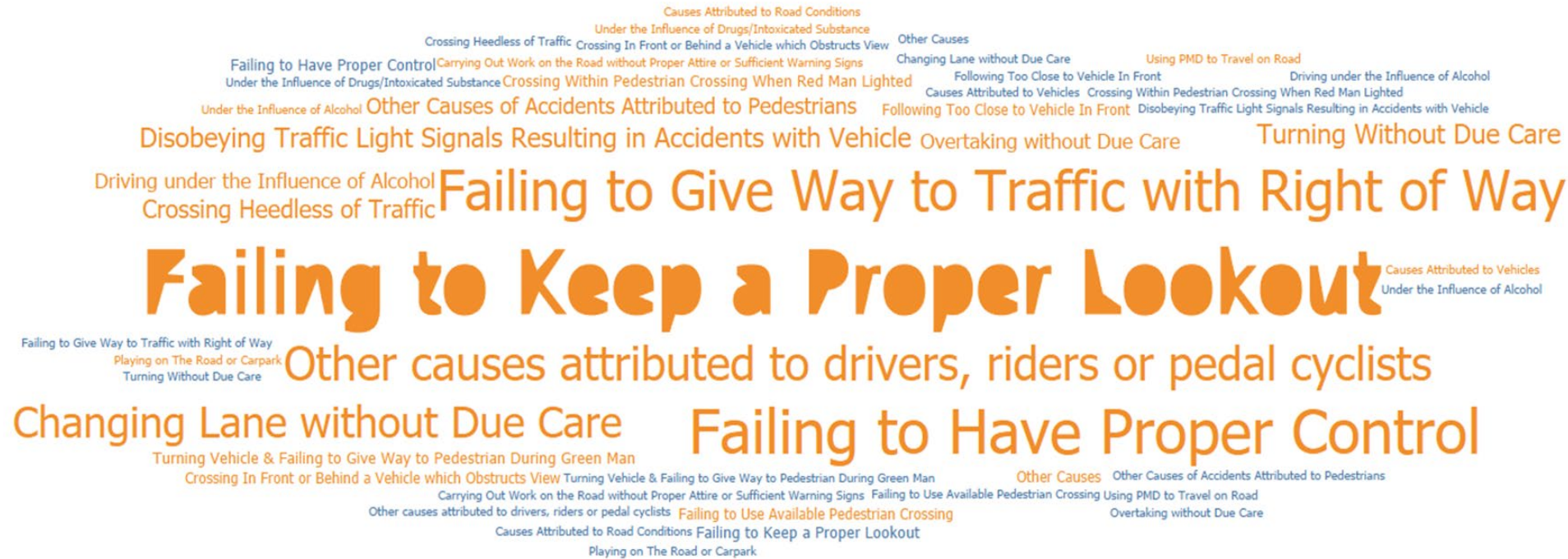
What about Text Data ??

Road_accidents.twbx

year	accident_classification	road_user_group	causes_of_accident	number_of_accidents
2012	FATAL	Drivers, Riders or Cyclists	Failing to Keep a Proper Lookout	59
2012	FATAL	Drivers, Riders or Cyclists	Failing to Have Proper Control	50
2012	FATAL	Drivers, Riders or Cyclists	Failing to Give Way to Traffic with Right of Way	9
2012	FATAL	Drivers, Riders or Cyclists	Changing Lane without Due Care	6
2012	FATAL	Drivers, Riders or Cyclists	Disobeying Traffic Light Signals Resulting in Accidents with Vehicle	9
2012	FATAL	Drivers, Riders or Cyclists	Turning Without Due Care	2
2012	FATAL	Drivers, Riders or Cyclists	Driving under the Influence of Alcohol	3
2012	FATAL	Drivers, Riders or Cyclists	Overtaking without Due Care	1
2012	FATAL	Drivers, Riders or Cyclists	Following Too Close to Vehicle In Front	1
2012	FATAL	Drivers, Riders or Cyclists	Turning Vehicle & Failing to Give Way to Pedestrian During Green Man	4
2012	FATAL	Drivers, Riders or Cyclists	Other causes attributed to drivers, riders or pedal cyclists	31
2012	INJURY	Drivers, Riders or Cyclists	Failing to Keep a Proper Lookout	2710
2012	INJURY	Drivers, Riders or Cyclists	Failing to Have Proper Control	1237

This workbook is a record of the road accidents that have happened with the details.

Word Cloud



Road User Group

☒ (All)

☐ Drivers, Riders ...

☐ NA

☐ Pedestrians

Accident Classification

☒ (All)

☐ FATAL

☐ INJURY

Year

☒ (All)

☐ 2012

☐ 2013

☐ 2014

☐ 2015

☐ 2016

Accident Classification

☒ FATAL

☐ INJURY

Practicalities of Good Charting

- Must not be too cluttered
- Should not confuse or mislead (wittingly or unwittingly)
- Should communicate 2-3 points to stand out sharply
- Use colours (for aesthetic reasons) but not excessively like a rainbow

Good/Bad??

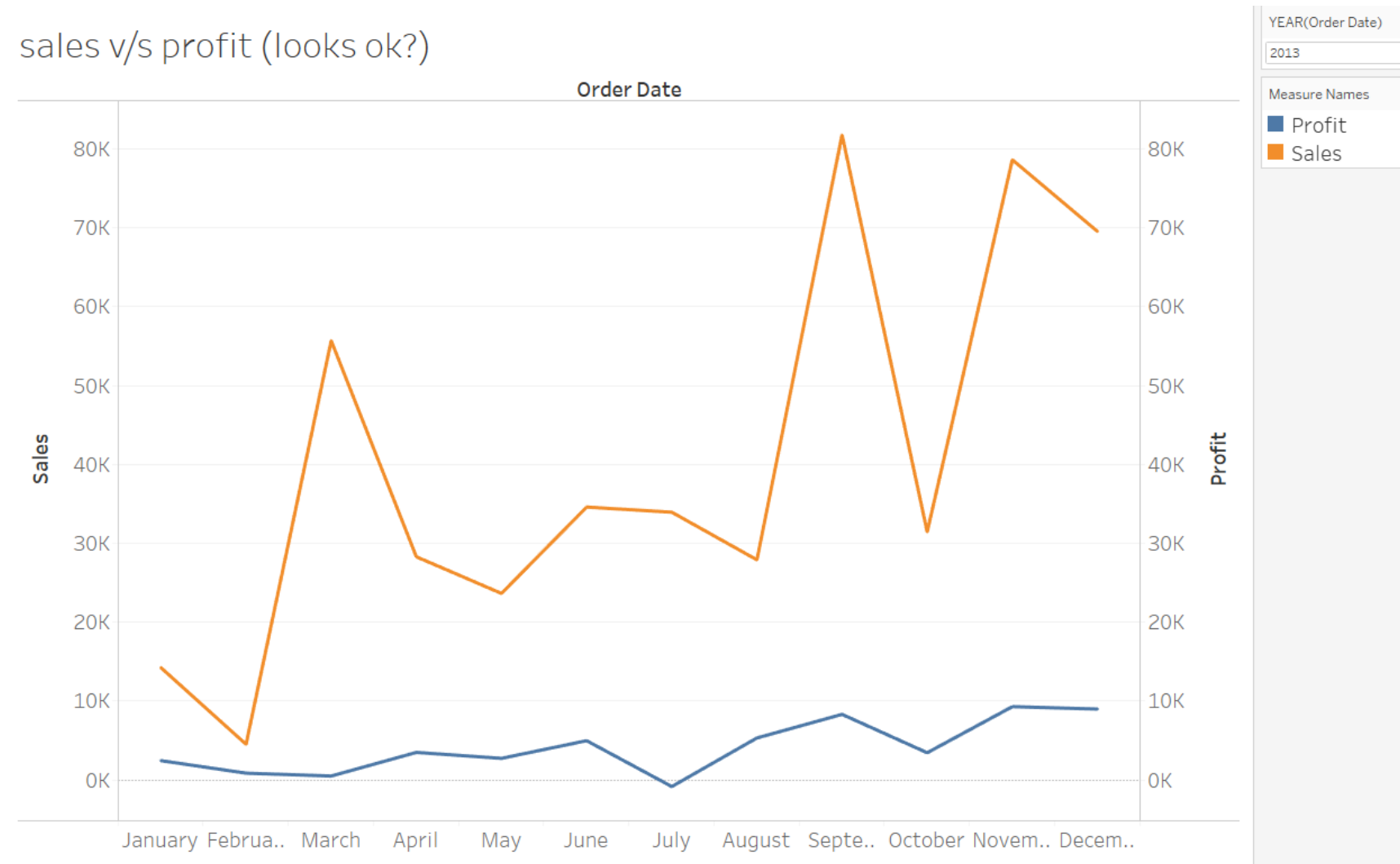
Sales & Profit (2012 – 2016)

sales v/s profit (looks ok?)



What principle does it violate?

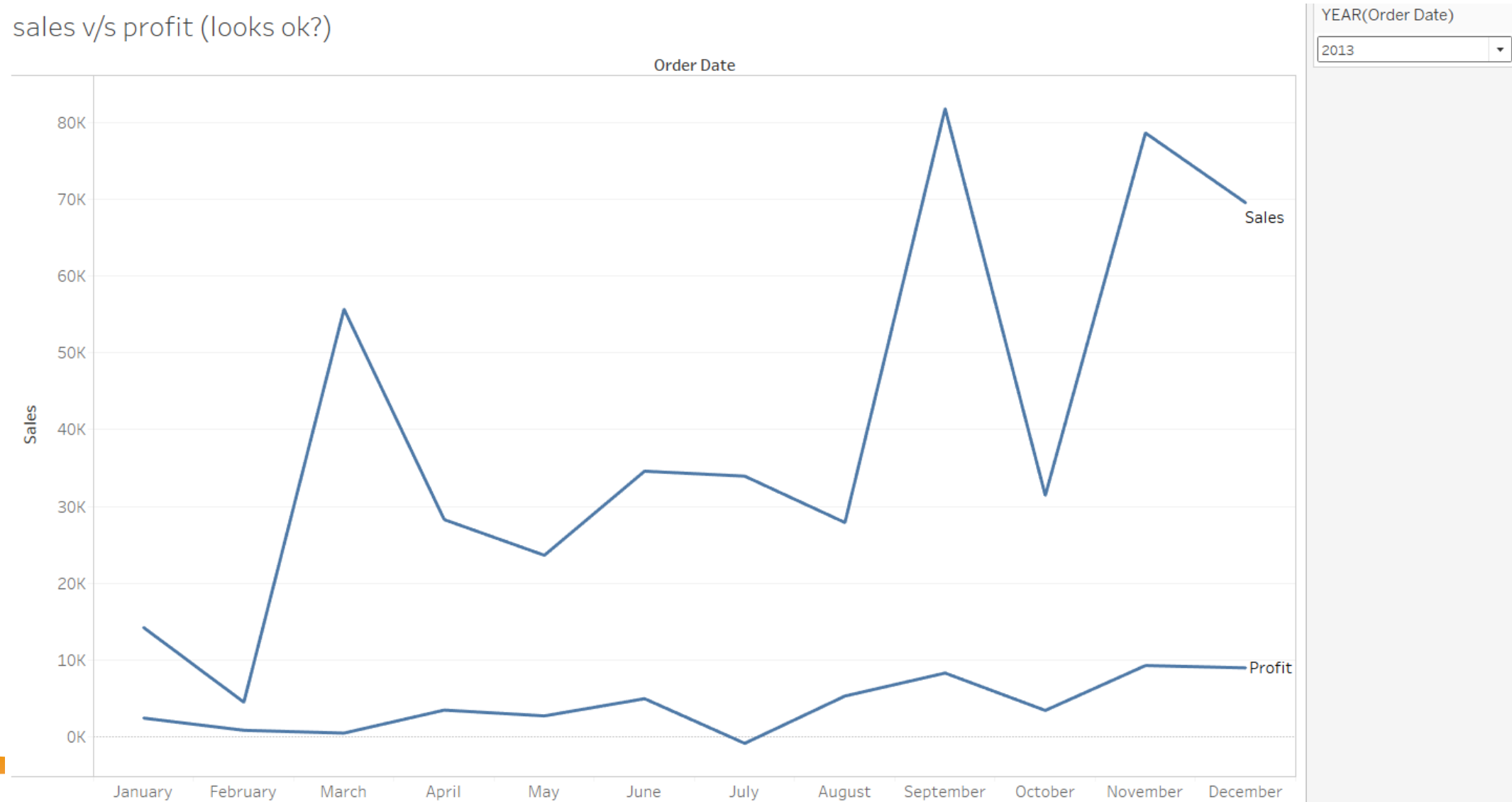
sales v/s profit (looks ok?)



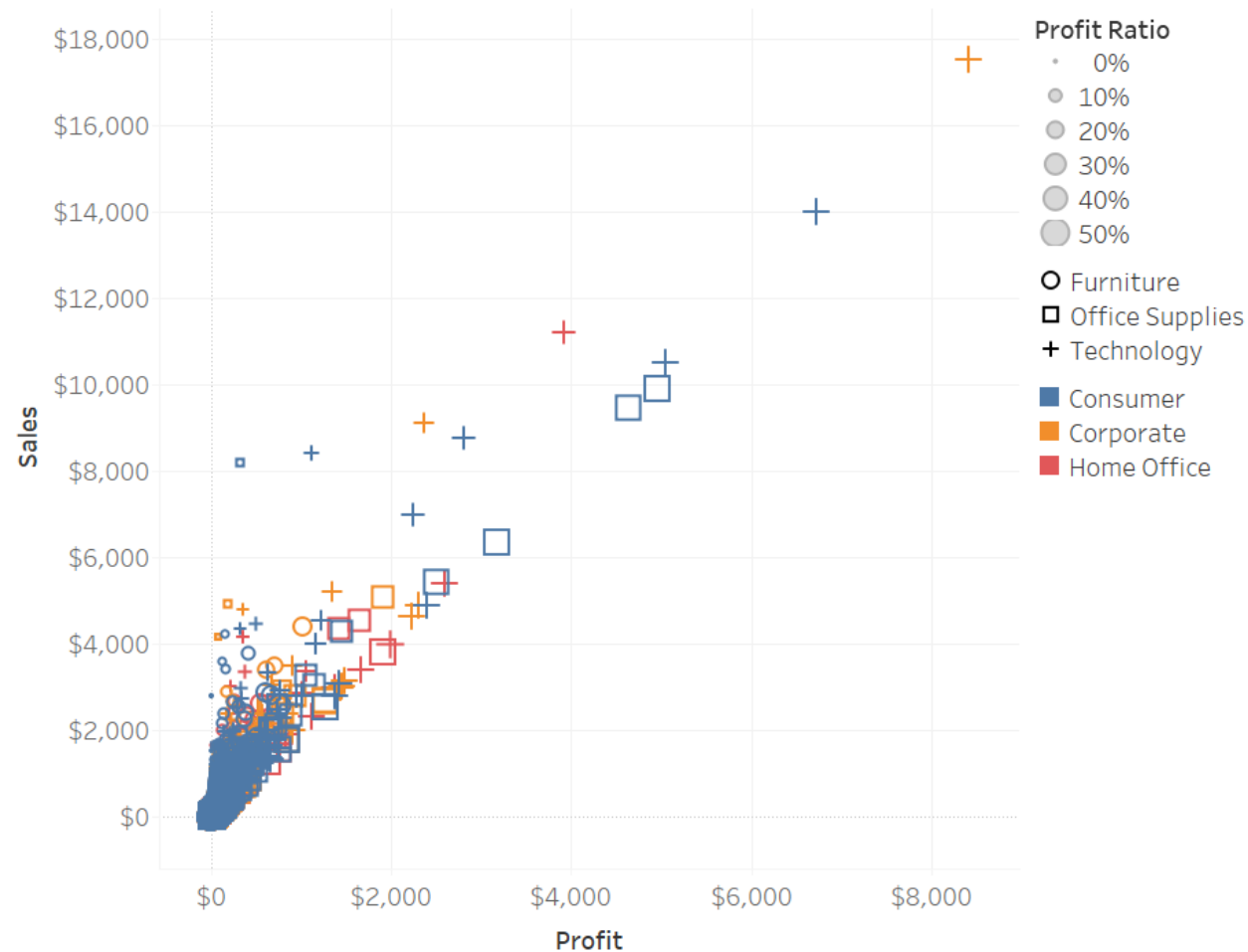
What 'practicality' does this violate?

What can be improved?

sales v/s profit (looks ok?)



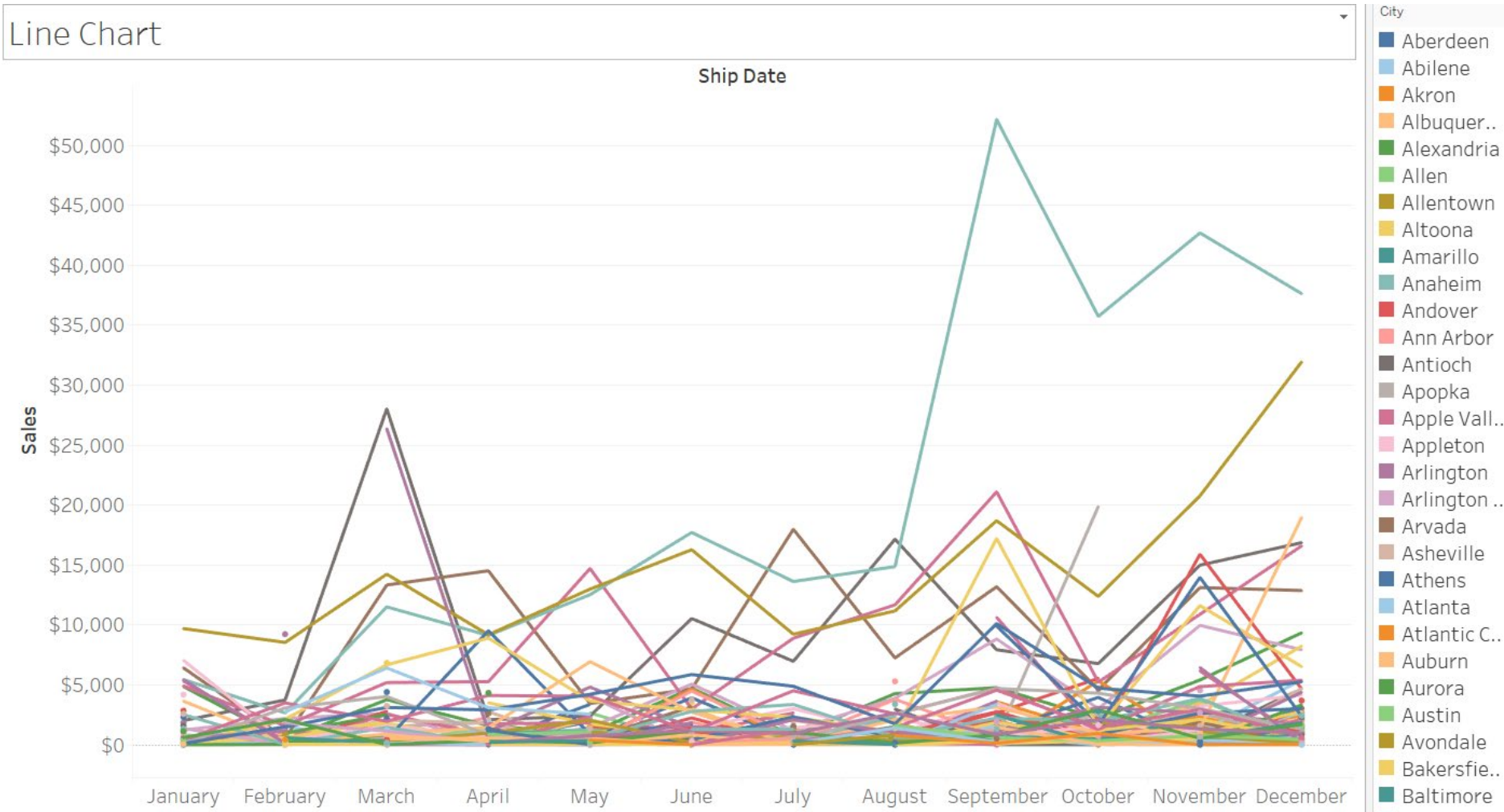
Scatter Plot



This is not helpful.

What 'practicality' does this violate?

What 'practicality' does this violate?



This is not helpful.

Workshop activity I

Learning objectives

- Charting Best Practices

File: NEISS.twbx

- In this Tableau file, there are 6 charting worksheets – CB-1 to CB-6. Replicate these worksheets in the adjacent worksheets.

File: Road_Accidents.twbx

- Replicate the worksheet in the adjacent worksheet.
- Perform a similar Word Cloud for the column “Narrative”. What insights can you get out of them?

Submission-1

- This is an individual exercise to help you familiarize with Tableau.
- At the end of the exercise, snapshot your charts in a powerpoint
- Save it with your full name such as **Day2PM_<YourName>.ppt**
- You **MUST** submit your work
- Upload to Google drive - (<https://tinyurl.com/yyedln5s>)

End of Session