Walk Through steps for Data Tutorials, PowerBI Project (Dashboard) by Yeo Chee En Luke

NOTE:

1. Unlike projects in which are from Alex The Analyst, Design do matter in this project
2. Where to get the data: <https://drive.google.com/drive/folders/1pCNs-TRPznlbAn712gAGy7XfBnWs2QJm>
3. For this project , I will reference the video from Data Tutorials in terms of the scope of the project , however, the way I clean or make the visualization will be different : <https://www.youtube.com/watch?v=Hn9f13uoLAQ&list=PLNr6y7fJuf_f9wCIPQTun4pMosf5e4fFk&index=4>
4. For this Project, the Dataset will be directly imported to powerBI instead of connecting from an actual database

**Problem to Solve + Other information**:

The client wants to create a Road Accident Dashboard with insights – In real world, there would normally be meetings that will discuss the requirements (KPI, time series, locations, ect) but in this case, we will follow the video scope as reference

Stakeholders: people that will be using the dashboard that we created: Ministry of transport, police, ambulance, public, media, ect

**Data Overview (before cleaning):**

* There is 300K+ Rows of data, 21 columns.
* Location details, accidents details, weather details are given to very specific information

**Data Overview (after loading into powerBI):**

Go to table view and change the uniqueID to ascending order to match the excel spreadsheet, if not PowerBI do auto arrange stuff for us hence, we can check column by column to ensure that there are different results to view (e.g. days: Monday to Friday, tick-box)

From checking BRIEFLY each column tick-box, there is no missing info when exporting or missing info in general from the original data itself.

**Data Cleaning:**

Click on “Transform Data” to edit and start cleaning the data, then “Close and Apply” when done

1. “Accident Severity” column, there is “Fatal” and “Fetal”, which means the same, so it maybe a typo by a user

**Solution:** Select the column -> replace value at home tab

1. The Accident Date has both Days and Date itself

**Solutions:**

Creating a Custom Date Table / Calendar Table(Normally use to compare years of value, 2023 vs 2022):

* Go to file -> options -> Data Load -> Time Intelligence (auto) checkbox is tick
* New table in modelling tab -> rename as Calendar
* When add, if use Calendarauto() ,
* How it works: Calendarauto() = start at Jan , (1) = start at Feb but it gives from 1990 to current
* Instead, we will use CALENDAR().
* In this case, we will use Calendar(MIN(Data[Accident Date]), MAX(Data[Accident Date]))
* Add a new column for years only: YEAR(‘Calendar’[Date])
* Add a new column for month only: FORMAT([‘Calendar’[Date], “mmm”)
* Go to Data Model (left side): Drag Accident Date to the Calendar table, it will auto form the relationship

**Data Visualization:**

Note:

* if we want a background, use powerpoint, make a background , save it as a jpg file and import it (make transparency to 0%)
* YOY = Year on Year

What the client wants:

- Create a Text box

- Go the format, take out background and change the colour

1. Primary KPI: Total Casualties and Total Accident values for current year and YOY growth

- Right click on “New Measure” on Data Table

- for current year use TOTALYTD(SUM(Data[Number\_of\_casualties]), Calendar[Date])

- Use Card diagram, add the New measurements to the Fields, format the visual as we want for design.

- Right click on “New Measure” on Data Table

- for YOY use (Current year casualty – Previous year casualty) / Previous year casualty

- Previous year = CALCULATE(SUM(Data[Number of casualties]), SAMEPERIODLASTYEAR(Calendar[Date])

- put is as percentage and in red colour then group it together

- Do the same steps for Total Accident use (TOTALYTD(COUNT(Data[Accident\_Index]), Calendar[Date])

1. Primary KPI: Total Casualties by Accident Severity for current year and YOY growth

-For this, we just need to add Accident\_Severity on CY Casualties on the Filters tab

1. Secondary KPI: Total Casualties with respect to Vehicle Type for current year

- Tick Vehicle\_Type data -> right click “New Group”

- Add a Multi-Row Visualisation

- Add Vehicle Type that has been group and CY Casualties BUT NOT IN FILTER, PUT DIRECTLY BELOW THE FIELD

4) Monthly trend showing comparison of Casualties for current year and previous year

- Open Area Chart

- X-axis: Calender[month] , Y-axis:Data[number of casualties] , Secondary Y-axis , Legend:Calender[Date]-> dropdown has “date hiearchy”

- For format of visual , turn off all title for ALL AXIS, turn off grindlines , turn off backgrounds, turn on series label

- NOTE : AT THIS POINT , VISUAL IS ONLY FROM APR -SEPT

- Go to Calandar, create a new column : Month Number = MONTH('Calendar'[Date])

- click on the graph/Month -> Column Tools -> Sort by Column -> Month Number

1. Casualties by Urban or Rurual Type for current year

- Create Pie Donut : Legend: Data[Urban or Rural] , Value: Data[CY Casualties], Details.

- in format Visual (the barchart with brush) -> off legend , go to detail labels -> label content: Percentage , off background, turn all text to white too . slices -> change color for each category

6) Current year casualties by Area/Location & Day/Night (copy paste in PowerBI then change)

- Create Pie Donut : Legend: Data[light Conditions] , Value: Data[CY Casualties], Details.

- in format Visual (the barchart with brush) -> off legend , go to detail labels -> label content: Percentage , off background, turn all text to white too . slices -> change color for each category

- Group the different Type of darkness

7) Total casualties and Total Accidents by Locations

- Use Map -> file -> Options and Setting -> Option -> Global (Turn on Use Map)

- Put the longtitude and Altitude (CHANGE BOTH USING ITS DROPDOWN TO AVERAGE) , Location: Local\_Authorties

- Off background , Map Settings -> Style to Dark, Control Setting -> off Auto Zoom , Add Zoom Buttons

8) Casualties base off Different Type of Road

- Create a Stack bar chart : X-axis:Data(CY Casualties), Y-axis:Data(Road Type), Legend.

- Make background gone , X-axis don’t need to show values, the rest change to white under values, turn on data labels -> make it to white too