Road Accident Dashboard

1. Data Cleaning
2. Data Analysis
3. Data Visualizations
4. Dashboard

Requirements:

Clients want to create a Road Accident Dashboard for year 2021 and 2022 So that they can have the following insights:

- Total Casualities taken place after the accident
- Total Casualities & percentage of total with respect to accident severity and maximum casualities by type of vehicle
- Total Casualities w.r.to type of vehicle
- Monthly trend showing comparison of casualties for current year and previous year
- Max Casualities by Road Type
- Distribution of Total Casualities by Road Surface
- Relationship b/w Casualities by Area/Location & by Day/Night

Stake holders:

- Ministry of Transport
- Road Transport Department
- Police Force
- Emergency Service Department
- Road Safety Corps
- Traffic Management Agencies
- Media

Metadata: file extension: .xlsx ; Rows:3.07M; Fields: 21

1. Data Cleaning

   ->Each cell is of different width adjust the cell size to number of words
   Select entire data change cell size of one column then remaining columns are adjusted accordingly
   ->Add filter to the each column
   Select all headers: Home -> Sort& Filter -> Filter
   Now we can see any wrong/missing values/ typo errors which we need to change

   Accident Index -> Primary Key -> no duplicates/ blanks are present
   Spelling error in Accident Severity: Fatal,Fetal
   So convert fetal to fatal
   Select entire col-> ctrl+f -> Replace fetal with fatal

2. Data Processing
   To have monthly trend we should have monthly column
   Insert new column Month=TEXT(<date cell>,”mmm”) and double click the + to apply to entire column
   Year=TEXT(<datecell>,”yyyy”)
3. Data Analysis & Visualizations
   Create Pivot table in new sheet & name that sheet with KPIs because first we will design our KPIs here

- Total Casualities taken place after the accident
  Pivot table with values: no.of casualities
- Total Casualities & percentage of total with respect to accident severity and maximum casualities by type of vehicle
  Pivot table with Rows: Accident_Severity
  values: no.of casualities

  Fatal_Severity:

Fatal:
=GETPIVOTDATA("Number_of_Casualties",$A$7,"Accident_Severity","Fatal")
Other:
=GETPIVOTDATA("Number_of_Casualties",$A$7,"Accident_Severity","Serious")+GETPIVOTDATA("Number_of_Casualties",$A$7,"Accident_Severity","Slight")
Fatal%= E8/($E$8+$E$9)
Other%= E9/($E$8+$E$9)
Convert that into percentage with 2 decimals
Select Donut Chart
Create similarly

Create Dashboard:
No grids: View -> disable gridlines
Add Background Color
ctrl+A->Fill color :#222835
First have rectangle with size 18x3 cm
Another rectangle for title 1.75x33.55cm
4 -> 3x8.3cm
Select all 4 -> shape format -> Align -> Align at middle & Distribute Horizontally
Title: Inset-> Text Box
-> No outlines & No shape fill
From directly pivot table we cant add so copy that value in other cell
Add Text box for no.of Casualities:= <select that cell>
To filter pivot table based on accident date timeline
Select a cell in the pivot table -> Insert-> Timeline-> Accident date
Copy donut chart -> Format it with no fill & No line -> 3x3 cm

- Total Casualities w.r.to type of vehicle
  Pivot table with Rows: vehicle_Type
  values: no.of casualities
  To combine similar types

Select item col cell ->Pivot table Analyze->calculated item-> =cars+ Taxi/Private hire car

Now hide cars and Taxi/Private hire car

Similarly, Bus+MiniBus; Van+Goods 7.5 + Goods under 7.5; All Motor cycles

For vehicle images: insert ->illustrations -> icons 1.5x1.5 cm

- Monthly trend showing comparison of casualties for current year and previous year

  Create new sheet for monthly trend pivot table(with filter 2021)
  Rows:Month
  Filters: Year
  Values: No.of Casualities
  Copy paste the same pivot table with filter 2022
  Insert Chart Month,2021 Casulaties, 2022 Casualities
- Max Casualities by Road Type

  Create new sheet for pivot table - road type
  Rows:Road_type
  Values: No.of Casualities
  To represent it in thousands : To format cell: Ctrl+1 -> custom-> 0.0,"K"
  Go to Pivot Table Analyze -> Bar chart
  Sort it
- Distribution of Total Casualities by Road Surface

  Create new sheet for pivot table - road surface
  Rows:Road_surface
  Values: No.of Casualities
  Combine Flood+Wet; Frost+Snow
  Copy paste the data and create the tree map

- Relationship b/w Casualities by Area/Location & by Day/Night

  Create new sheet for pivot table -
  Rows: Urban or ruler area
  Values: No.of Casualities

To represent it in thousands : To format cell: Ctrl+1 -> custom-> 0.0,"K"
Pivot table analyze -> Pivot chart ->pie-> Donut

Filter panel:
Add Accident date timeline
Right click Accident date timeline -> Report connections-> select except multi trend
Insert Slicer for Urban or rural area
Right click Urban or rural area Slicer-> Report connections-> select all

Time line-> New time line style ->