# Problem statement

* Client wants to create road accident dashboard for year 2021 to 2022so that they can have the useful insights

# Requirement Gathering

* Primary KPI’s :- Total casualties and total accident values for current year and Year to year (Yoy) growth.
* Primary KPI’s :- Total casualties by accident severity for current year and yoy growth.
* Secondary KPI’s :- Total causalities with respect to vehicle type for current year.
* Monthly trend showing comparison of causalities for current year and previous year.
* Casualties by road type in current year
* Current year casualties by Location/area/and day or night.
* Total casualties and total accidents by location.

# Stakeholders

1. Police Force
2. Ministry of Transport
3. Road Transport Department
4. Emergency Service Department
5. Transport Operators
6. Traffics management Agencies.
7. Public
8. Media

# Power bi functionalities that we will use in this project

* How to connect to raw data /flat file.
* Data cleaning in power query.
* Data Processing.
* Time Intelligence function/ Calendar date table in powerbi.
* Data Modeling (Relationship between multiple tables)
* YTD and Yoy growth calculations using Dax.
* KPI advance KPI generations
* Creating custom columns and measures in the reports.
* Importing images
* Creating different charts and generating insights
* Export the report to the users

# Data Cleaning

* There was an error in the severity column where there was an error entry fetel which we replace with fatal.
* Similarly, all columns were checked, and the data is cleaned

# Data processing

* We will create the calendar table so that it will be easy for us to extract the date with year-to-year requirement or any time relevant requirements.
* Next, we created month and year columns that will represent each of them separately.

# Data Modeling

* In this step we have to connect the two tables, that is data and the calendar table.
* many to one relationship will be created between both the tables.
* So the date columns in the data table will have distinct values whereas the date column in the accident date table will have repeated values.
* Now, we will use the calendar date and not the accident date values since both the tables are connected.

# Building the visuals

* As per our first requirement we are adding a new measure named “CY Casualties” and then using the total YTD function to determine year to date casualties.
* For calculating previous year casualties, we will use time intelligence functions like “same period last year” and create a new measure named “PY casualties”
* Now to calculate year to year we will use the formula YOY Casualties = ([CY Casualties]-[PY casualties]) /[PY casualties]
* For our second requirement that is to calculate total accident we will do similar calculations as before and for that we will be using total YTD function and the formula will be YOY Accidents = ([CY Accident Count]-[PY Accidents])/[PY Accidents]
* Using the filters, we build a separate visual for total current year fatal casualties. And similarly for total current year serious casualties
* For the Casualties by vehicle types, we have first of all group the vehicles in 6 different categories namely car, bus, van, bike, agricultural and others.
* Then for CY Casualties VS PY Casualties the major problem was that the months are not displayed in their respective order so for that we added the month number column in the data table.
* Similarly for light condition we grouped darkness- lightning unknown, darkness-lights lit, darkness-lights unlit, darkness no lighting as one group (Dark) and the daylight as day