**Problem statement**

1. Primary KPI-Total casualties and Total accidents values for current year and YOY Growth.
2. Primary KPI’s- Total casualties by accident severity for current year and YOY growth.
3. Secondary KPI’s- Total casualties with respect to vehicle type for current year.
4. Monthly trend showing comparison of casualties for current year and previous year.
5. Casualties by road type for current year.
6. Current year casualties by area/ location and by day/ night.
7. Total casualties and total accidents by location.

**Data Cleaning**

1. Firstly, we should clean the data.
2. In the given data, changed or renamed the word. It was misspelled in accident severity column.
3. In junction\_control column also, there was a misspelled data.

Data Processing

1. Create a new table called calendar

Formula:

Calendar= CALENDERAUTO()

If you enter the by elefarit value will start from 1 January 1899. We’ll use different function (CALENDER)

Formula:

Calendar=CALENDAR(MIN [Accident.Date]), MAX([Accident Date])

1. Now from calendar table, we need to extract the year column.
2. So click on new column (you should have selected the calendar table, so that the column is created in that particular table).

Year= YEAR(Calendar[Date])

1. Follow the same steps from (3) to make a column for months column
2. We can’t use the same formula, as we don’t want the values to be in number, so we use different formula.

Month= FORMAT( Calendar [Date], ‘mmmm’).

Data Modelling

1. Now we need to connect the calendar table with the main data table.
2. And we can do that by using model view.
3. Now we’ll connect the accident\_data Field from data table to the date field from calendar table to create a relationship.

* Creating a measure for current Year (CY) Casualties

Formula:

CY Casualties= TOTALYTD(SUM(Data [Number\_of\_casualties]), Calendar[Date]).

* Creating a measure for previous year (PY) casualties

Formula:

PY casualties= CALCULATE(SUM(Date [number\_of\_casualties]), SAME PERIOD LAST YEAR( Calendar [Date])).

* Creating a measure for Year On Year (YOY) casualties

Formula:

YOY casualties= ([CY Casualties]- [PY Casualties])/ [PY Casualties]

* Creating a measure for Current year (CY) accident

Formula:

CY Accidents= TOTALYID ((COUNT(Data (Accident\_Index]), Calendar[Date]).

* Creating a measure for previous year (PY) Accident

Formula:

PY Accidents=Calculate (Count(Data[accident index]), same period last year (calendar [Data]).

* Creating a measure for Year on Year (YOY) accidents

Formula:

YOY accidents= ([CY Accidents] – [PY Accidents]) / [PY Accident]

* To get the total casualties of the current year by accident severity we need to use the filters, we need to add the accident severity column in the filter section.
* There are many vehicle types but we only need to include 6 types, So we will group the similar types together.
* Following are the groups:

1. Bike:

* Motorcycle 125CC and under.
* Motorcycle 50CC and under.
* Motorcycle over 12CC and up to 50 CC.
* Motorcycle over 50CC.
* Pedal cycle.

1. Car:

* Car.
* Taxi/ private hire Car.

1. Bus:

* Bus or Coach (17 or more passenger seats)
* Minibus (8-16 passenger seats)

1. Van:

* Goods 7.5 tonnes mgw and over.
* Goods over 3.5 tonnes and under 7.5 tonnes.
* Van/Goods over 3.5 tonnes mgw and under.

1. Others:

* Other vehicle
* Ridden vehicle

1. Agriculture:

* Agriculture vehicle
* We’ll group light condition value into 2 groups: day and Night

1. Night

* Darkness-lightning unknown
* Darkness-Light lit
* Darkness-light unlit
* Darkness- no lights

1. Day

* Day light
* Do the same with weather conditions.
* Do the same with Road surface.