Qlik Analysis Of Road Safety And Accident Patterns In India

Project Flow

The activities listed below must be completed:

1. Introduction
- Overview : A brief description about your project
- Purpose: The use of this project. What can be achieved using this
- Technical Architecture

2. Define Problem / Problem Understanding
- Specify the business problem
- Business requirements
- Literature Survey
- Social or Business Impact

3. Data Collection
- Collect the dataset
- Understand the Dataset
- Connect Data with Qlik Sense

4. Data Preparation
- Prepare the Data for Visualization

5. Data Visualizations
- Number of Unique Visualizations

6. Dashboard
- Responsive and Design of Dashboard

7. Story
- Story Creation

8. Performance Testing
- Utilization of Data Filters
- Number of Calculation Fields/Master Items
- Number of Visualizations/Graphs

Introduction

Overview : A brief description about your project

Project Description:

The purpose of this project is to analyze accident statistics and road safety in India using Qlik's data analytics platform. The project's goal is to find patterns, problem areas, and causes of road accidents by analyzing a variety of data sources, including traffic records, weather reports, road infrastructure details, demographic information, and accident reports. Government officials, transportation agencies, and road safety groups may all benefit from this report by using it to inform data-driven choices that will increase road safety, decrease accident rates, and ultimately save lives.

Scenario 1 : Hotspot Identification

The analytics provided by Qlik can identify areas or roads in India that have a disproportionately high accident rate. The technology can track accident data and correlate it with variables such as traffic, road conditions, and time of day to pinpoint areas that are more likely to have accidents. In order to execute targeted interventions like better signage, more traffic monitoring, and revised speed limits, this data is essential.

Scenario 2 :

Evaluation of Current Trends Using trend analysis, Qlik may find trends and recurrent causes of accidents in accident data. It entails looking at things like seasonal changes, different types of accidents (such as collisions or pedestrian accidents), and driver behavior (such as speeding or distracted driving). A better understanding of the reasons can lead to changes in regulation, driver training programs, and public awareness initiatives.

Scenario 3 :

Modeling for the Future Qlik is able to predict possible accident scenarios by utilizing predictive analytics on real-time data inputs. The technology can detect patterns in traffic, weather predictions, and past accident data to give early warnings and prevent accidents before they happen. With this kind of foresight, authorities may plan their resource deployment and take preventative safety precautions.

Purpose: The use of this project. What can be achieved using this

The purpose of the project titled "Road Accidents in India" is to investigate and get an understanding of the patterns and factors that contribute to road accidents throughout India.This initiative seeks to enhance overall road safety in India as well as minimize the number of accidents that occur on Indian roads. One can do the following by utilizing the data:

1. Identify key factors contributing to accidents.
2. Develop targeted strategies for improving road safety.

3. Inform policy-making for traffic management and infrastructure improvements.
4. Enhance public awareness of road safety issues.
5. Support academic research in transportation safety and public health.

Technical Architecture

- Data Ingestion
- Data Modeling
- Data Transformation
- Data Visualization
- Dashboard Development
- creation of Storytelling
- Deployment and Maintenance
- Performance Optimization
- Reporting and Analytics

Define Problem / Problem Understanding :

Specify the business problem:

➤ The business problem in this scenario is the significant number of road accidents in India, resulting in loss of life and serious injuries. The goal of the study is using
Qlik Sense is to conduct an analysis of the trends in road safety and accidents in India, with a particular emphasis on the different types of accidents, locations, triggers, and variables that contribute to road safety or dangers. This strategy, which is driven by data, intends to provide insights and visualizations that can be used to inspire initiatives for increasing drivers' safety on the roads across the nation.To address this problem, the study should consider the following specific aspects:

➤ **Types of accidents:** The study should sort and examine the different kinds of car accidents that happen in India, such as rear-end crashes, head-on collisions, and accidents involving pedestrians. This will help discover the most common kinds of accidents and the contributing factors that lead to them.

➤ **Locations:** The study should look at the places where accident rates happen, like roads, cities, and rural areas. This will help discover which places need special attention and specific safety steps.

➤ **Causes:** The study should look into the main reasons why accidents happen on Indian roads, such as driver mistakes, bad road equipment, damaged vehicles, overloading, bad weather, and people not knowing what their rights are. This will help discover the most important things that cause crashes and guide plans for preventing them.

➤ Factors contributing to road safety or risks:The study should look into the main reasons why accidents happen on Indian roads, such as driver mistakes, bad road equipment, damaged vehicles, overloading, bad weather, and people not knowing what their rights are. This will help discover the most important things that cause crashes and guide

plans for preventing them.
➤ By examining these aspects using Qlik Sense, the study can generate valuable insights and visualizations that can inform strategies for improving road safety in India.

Business requirements:

➤ The study's business criteria aim to generate actionable insights into user demographics, accident trends, and issue areas. In order to facilitate strategic planning and operational enhancements, the major focus is on the creation of dashboards that are both visually appealing and interactive. This research will provide valuable insights that will be of great assistance in making well-informed decisions, putting in place improved safety practices, and maintaining compliance with legislation.
➤ The research may provide important insights that can help with strategic planning, operational improvements, and informed decision-making by taking these elements into consideration, ultimately leading to greater road safety and regulatory compliance.

➤ **User Demographics:** The analysis should look at the demographics of drivers involved in road accidents, such as age, gender, employment, and location. This will assist in identifying high-risk populations and directing targeted safety actions toward them.

➤ **Accident Patterns:** The study should look at accident trends, such as the types of accidents that happen, where they happen, when they happen, and the weather. This will assist in identifying areas where we can enhance safety measures and optimize resource utilization.

➤ **Problem Areas:** The analysis should identify the specific problem areas contributing to accidents, such as poor road infrastructure, inadequate lighting, or lack of traffic enforcement. This will help prioritize safety initiatives and allocate resources effectively.

➤ Interactive and Visually Compelling Dashboards: The analysis should focus on creating interactive and visually compelling dashboards that can be easily understood by stakeholders. This will enable them to make informed decisions and track the effectiveness of safety initiatives.
➤ Strategic Planning and Operational Improvements: The analysis should provide insights that support strategic planning and operational improvements. This includes identifying areas where safety measures can be improved, optimizing resource allocation, and ensuring compliance with regulations.
➤ Informed Decision-Making: The analysis should provide actionable insights that inform decisions related to road safety. This includes identifying high-risk areas, optimizing safety initiatives, and allocating resources effectively.

Literature Survey:

➤ Compliance with Regulations: The analysis should ensure compliance with regulations related to road safety. This includes identifying areas where safety measures can be improved to meet regulatory requirements.

➤ By conducting a comprehensive literature survey, researchers can gain a deeper understanding of the current state of knowledge in road safety and accident analysis, identify gaps in the existing literature, and inform the development of new research projects and initiatives.

- ■ PubMed: A comprehensive database of biomedical and life literature, which includes studies on road traffic accidents and their analysis.

- ■ IEEE Xplore: A digital library that provides access to technical electrical engineering, computer science, and related disciplines, including research on road traffic accidents and safety.

- ■ Google Scholar: A search engine for scholarly literature that articles, theses, books, and conference papers from a wide range of sources, including those related to road safety and accident analysis.

- ■ Transport for NSW Reports: The NSW Government's transport provides detailed reports on road traffic crashes in New South Wales,including statistics, trends, and analysis.

- ■ World Health Organization (WHO) Reports: WHO publishes reports global road safety, including data on road traffic accidents, injuries, and fatalities, as well as strategies for improving road safety.

- ■ Umm Al-Qura University Publications: The university's publications research papers on road traffic accidents and safety, including studies Ondata analytics and predictive modeling.

- ■ Other University and Research Institution Publications: Similar to Qura University, other institutions publish research papers and studies on road safety and accident analysis, which can be accessed through their institutional repositories.

Key Findings and Recommendations:

- ■ **Data Analysis Techniques**: The literature survey should focus on various data analysis techniques used in road safety research, including descriptive statistics, regression analysis, and machine learning algorithms.

- ■ **Predictive Modeling**: The survey should also examine the use of modeling in road safety research, including the application of techniques such as decision trees, random forests, and neural networks.

- ■ Data Sources: The survey should investigate the different data

used in road safety research, including government reports, police records,and insurance claims data.

- ■ Results and Conclusions: The survey should summarize the key conclusions from the reviewed studies, highlighting the most effective methods and techniques for analyzing road safety data and improving road safety outcomes

Social or Business Impact:

Here is a social impact analysis using the road accidents data set from Dataset:

- ➤ Demography Distribution of Accidents
  - ○ The demographic distribution of accidents across the country can be visualized using the following graph: Age Group Distribution of Victims (2021)
  - ○ 18-45 years: 66.5% of victims
  - ○ 18-60 years: 83.4% of victims Gender Distribution of Victims(2021)
  - ○ Male: 74.5% of victims
  - ○ Female: 25.5% of victims
- ➤ Severity of Accidents
  - ○ The severity of accidents in different areas of traffic control can be compared using the following graph: Accident Severity by Road Type(2021)
  - ○ National Highways:; 366.2%% of fatalities
  - ○ State Highways: 24...3 percent of fatalities
  - ○ Other Roads: 39.4% of fatalities
- ➤ Correlation between speeding Weather and Total Accidents
  - ○ The correlation between speeding, weather, and total accidents can be explored using the following graph: Speeding and Weather Impact on Total Accidents (2021)
  - ○ Speeding: 44.5% of accidents
  - ○ Weather: 19.5% of accidents
- ➤ Leading causes of Accidents
  - ○ The leading causes of accidents can be identified using the following graph: Leading Causes of Accidents(2021)
  - ○ Human Error: 32.9% of accidents
  - ○ Poor Road Infrastructure: 23.1% of accidents
  - ○ Vehicle Condition: 14.8% of accidents
- ➤ Distribution of Age Groups and Gender of Victims
  - ○ The distribution of age groups and gender of the victims can be examined using the following graph:Age Group and Gender Distribution of Victims (2021)
  - ○ 18-45 years: 66.5% of victims
  - ○ Young Adults(18-45 years): 66.5% of victims
  - ○ Working Age Group (18-60 years): 83.4% of victims
  - ○ Male: 74.5% of victims
  - ○ Female: 25.5% of victims
- ➤ Contribution of Diverse Types of Vehicles to Total Accidents

- ○ The contribution of diverse types of vehicles to the number of accidents can be investigated using the following graph: Vehicle Distribution(2021)
- ○ Two-Wheelers: 44.5% of accidents
- ○ Light Vehicles (cars,Jeeps,Taxis): 23.1% of accidents
- ○ Heavy Vehicles (Trucks, Buses): 14.8% of accidents

Data Collection:

Collect the dataset:
- ⭐ Data collection is the process of gathering and measuring information on variables of interest in an established, systematic fashion that enables one to answer stated research questions, test hypotheses, evaluate outcomes, and generate insights from the data.

- ⭐ ROAD ACCIDENTS IN INDIA 2019
  - ○ Kaggle is the world's largest data science community with powerful tools and resource to help you achieve your data science goals and below is the link used for analysis, dashboards using qlik cloud sense:
  - ○ https://www.kaggle.com/datasets/aryakittukrishnasai/road-accidents-in-india

Understand the Dataset:
The dataset provided by kaggle contains information on road accidents in India. It includes details such as the number of accidents, fatalities, and injuries, as well as the types of vehicles involved and the locations where the accidents occurred.
Data contains all the media information regarding the columns described in the Excel files

Description of the Dataset:
There are nine data files that have been converted to Excel worksheets(.xlsx) for ease of use with respect to qlik Sense. The list of files is as follows:
- ➤ **Pedestrians:** State/UT-wise pedestrians involved in accidents according to classification of age and gender during 2019 Columns of the dataset:
  1. State/UT
  2. Less than 18 years – Male
  3. Less than 18 years – Female
  4. 18-25 Years – Male
  5. 18-25 Years – Female
  6. 25-35 Years – Male
  7. 25-35 Years – Female
  8. 35-45 Years – Male
  9. 35-45 Years – Female
  10. 45-60 Years – Male
  11.45-60 Years – Female
  12.60 and Above – Male

13. 60 and Above – Female

14. Age not known – Male

15. Age not known – Female

➤ **Pedestrians Killed :** State/UT - wise pedestrians killed according classification of age and gender during 2019. Columns of the dataset:

1. State/UT

2. Less than 18 years - Killed - Male

3. Less than 18 years - Killed - Female

4. 18-25 Years - Killed - Male

5. 18-25 Years - Killed - Female

6. 25-35 Years - Killed - Male

7. 25-35 Years - Killed - Female

8. 35-45 Years - Killed - Male

9. 35-45 Years - Killed - Female 10.45-60 Years - Killed - Male

11. 45-60 Years - Killed - Female

12. 60 and Above - Killed - Male

13. 60 and Above - Killed - Female

14. Age not known - Killed – Male

15. Age not known - Killed - Female

➤ **Pedestrians killed** - Impacting vehicles: State/UT-wise Pedestrians killed in accidents classified by the type of impacting vehicles during 2019 Columns of the dataset:

1. States/UTs

2. Bicycles

3. Two Wheeler

4. Auto Rickshaws

5. Cars, Taxis, Vans and LMV

6. Trucks/Lorries

7. Buses

8. Other Non-Motorized Vehicles (E-rickshaw, etc.)

9. Others

10. Total

➤ **Traffic Control Type:** State/UT-wise accidents classified according to the type of traffic control during 2019 Columns of the dataset:

1. States/UTs

2. Traffic Light Signal - Total number of Accidents

3. Traffic Light Signal - Persons Killed

4. Traffic Light Signal - Persons Injured - Grievously Injured

5. Traffic Light Signal - Persons Injured - Minor Injury
6. Traffic Light Signal - Persons Injured - Total Injured
7. Police Controlled - Total number of Accidents
8. Police Controlled - Persons Killed
9. Police Controlled - Persons Injured - Grievously Injured
10. Police Controlled - Persons Injured - Minor Injury
11. Police Controlled - Persons Injured - Total Injury
12. Stop Sign - Total number of Accidents
13. Stop Sign - Persons Killed
14. Stop Sign - Persons Injured - Grievously Injured
15. Stop Sign - Persons Injured - Minor Injury
16. Stop Sign - Persons Injured - Total Injured
17. Flashing Signal/Blinker - Total number of Accidents
18. Flashing Signal/Blinker - Persons Killed
19. Flashing Signal/Blinker - Persons Injured - Grievously Injured
20. Flashing Signal/Blinker - Persons Injured - Minor Injury
21. Flashing Signal/Blinker - Persons Injured - Total Injured
22. Uncontrolled - Total number of Accidents – Number
23. Uncontrolled - Total number of Accidents – Rank
24. Uncontrolled - Persons Killed – Number
25. Uncontrolled - Persons Killed – Rank
26. Uncontrolled - Persons Injured - Grievously Injured
27. Uncontrolled - Persons Injured - Minor Injury
28. Uncontrolled - Persons Injured - Total Injured
29. Others - Total number of Accidents
30. Others - Persons Killed
31. Others - Persons Injured - Grievously Injured
32. Others - Persons Injured - Minor Injury
33. Others - Persons Injured - Total Injured
➤ **Weather:** State/UT-wise accidents classified according to the type of weather and severity of the accidents during 2019 Columns of the dataset:
1. States/UTs
2. Sunny/Clear - Total Accidents – Number
3. Sunny/Clear - Total Accidents – Rank
4. Sunny/Clear - Persons Killed – Number
5. Sunny/Clear - Persons Killed – Rank
6. Sunny/Clear - Persons Injured - Grievously Injured

7. Sunny/Clear - Persons Injured - Minor Injury

8. Sunny/Clear - Persons Injured - Total Injured

9. Rainy - Total Accidents

10. Rainy - Persons Killed

11. Rainy - Persons Injured - Grievously Injured

12. Rainy - Persons Injured - Minor Injury

13. Rainy - Persons Injured - Total Injured

14. Foggy and Misty - Total Accidents

15. Foggy and Misty - Persons Killed

16. Foggy and Misty - Persons Injured - Grievously Injured

17. Foggy and Misty - Persons Injured - Minor Injury

18. Foggy and Misty - Persons Injured - Total Injured

19. Hail/Sleet - Total Accidents

20. Hail/Sleet - Persons Killed

21. Hail/Sleet - Persons Injured - Grievously Injured

22. Hail/Sleet - Persons Injured - Minor Injury

23. Hail/Sleet - Persons Injured - Total Injured

24. Others - Total Accidents

25. Others - Persons Killed

26. Others - Persons Injured - Grievously Injured

27. Others - Persons Injured - Minor Injury

28. Others - Persons Injured - Total Injured

➤ **Killed on Two-Wheeler - Impacting vehicles:** State/UT-wise Two-Wheeler killed in accidents classified by the type of impacting vehicles during 2019 Columns of the dataset:

1. States/UTs

2. Bicycles

3. Two Wheeler

4. Auto Rickshaws

5. Cars, Taxis, Vans and LMV

6. Trucks/Lorries

7. Buses

8. Other Non-Motorized Vehicles (E-rickshaw, etc.)

9. Others

10. Total

➤ **Road Users Killed - Gender:** State/UT-wise, male and female persons killed in road accidents in terms of road user categories during 2019 Columns of the dataset:

1. States/UTs

2. Pedestrian – Male

3. Pedestrian – Female

4. Pedestrian – Total

5. Bicycles – Male

6. Bicycles – Female

7. Bicycles – Total

8. Two-Wheeler – Male

9. Two-Wheeler – Female

10. Two-Wheeler – Total

11. Two-Wheeler – Rank

12. Auto Rickshaws – Male

13. Auto Rickshaws – Female

14. Auto Rickshaws – Total

15. Cars, taxes Vans and LMV – Male

16. Cars, taxies Vans and LMV – Female

17. Cars, taxies Vans and LMV – Total

18. Trucks/Lorries – Male

19. Trucks/Lorries – Female

20. Trucks/Lorries – Total

21. Buses – Male

22. Buses – Female

23. Buses – Total

24. Other non-Motor vehicles(E-Rickshaw) – Male

25. Other non-Motor vehicles(E-Rickshaw) – Female

26. Other non-Motor vehicles(E-Rickshaw) – Total

27. Others – Male

28. Others – Female

29. Others - Total

➤ **Causes:** State/UT-wise Accident victims classified according to the causes of accidents during 2019 Columns of the dataset:
1. States/UTs

2. Over-Speeding - Number of Accidents – Number

3. Over-Speeding - Number of Accidents – Rank

4. Over-Speeding - Persons Killed – Number

5. Over-Speeding - Persons Killed – Rank

6. Over-Speeding - Persons Injured - Grievously Injured

7. Over-Speeding - Persons Injured - Minor Injury

8. Over-Speeding - Persons Injured - Total Injured

9. Drunken Driving/ Consumption of alcohol and drug - Number of Accidents

10.Drunken Driving/ Consumption of alcohol and drug - Persons Killed

11.Drunken Driving/ Consumption of alcohol and drug - Persons Injured - Grievously Injured

12.Drunken Driving/ Consumption of alcohol and drug - Persons Injured - Minor Injury

13.Drunken Driving/ Consumption of alcohol and drug - Persons Injured - Total Injured

14.Driving on Wrong side - Number of Accidents

15.Driving on Wrong side - Persons Killed

16.Driving on Wrong side - Persons Injured - Grievously Injured

17.Driving on Wrong side - Persons Injured - Minor Injury

18.Driving on Wrong side - Persons Injured - Total Injured

19.Jumping Red Light - Number of Accidents

20.Jumping Red Light - Persons Killed

21.Jumping Red Light - Persons Injured - Grievously Injured

22.Jumping Red Light - Persons Injured - Minor Injury

23.Jumping Red Light - Persons Injured - Total Injured

24.Use of Mobile Phone - Number of Accidents

25.Use of Mobile Phone - Persons Killed

26.Use of Mobile Phone - Persons Injured - Grievously Injured

27.Use of Mobile Phone - Persons Injured - Minor Injury

28.Use of Mobile Phone - Persons Injured - Total Injured

29.Others - Number of Accidents

30.Others - Persons Killed

31.Others - Persons Injured - Grievously Injured

32.Others - Persons Injured - Minor Injury

33.Others - Persons Injured - Total Injured

➤ **Accidents - Severity and Vehicles:** State/UT-wise vehicle type of victims and severity of accidents during 2019 Columns of the dataset:

1. States/UTs

2. Pedestrian - Number of Road Accidents

3. Pedestrian - Number of Persons – Killed

4. Pedestrian - Number of Persons - Grievously Injured

5. Pedestrian - Number of Persons - Minor Injured

6. Bicycles - Number of Road Accidents

7. Bicycles - Number of Persons – Killed

8. Bicycles - Number of Persons - Grievously Injured

9. Bicycles - Number of Persons - Minor Injured

10. Two Wheeler - Number of Road Accidents

11. Two Wheeler - Number of Persons – Killed

12. Two Wheeler - Number of Persons - Grievously Injured

13. Two Wheeler - Number of Persons - Minor Injured

14. Auto Rickshaws - Number of Road Accidents

15. Auto Rickshaws - Number of Persons – Killed

16. Auto Rickshaws - Number of Persons - Grievously Injured

17. Auto Rickshaws - Number of Persons - Minor Injured

18. Cars, Taxis, Vans and LMV - Number of Road Accidents

19. Cars, Taxis, Vans and LMV - Number of Persons – Killed

20. Cars, Taxis, Vans and LMV - Number of Persons - Grievously Injured

21. Cars, Taxis, Vans and LMV - Number of Persons - Minor Injured

22. Trucks/Lorries - Number of Road Accidents

23. Trucks/Lorries - Number of Persons – Killed

24. Trucks/Lorries - Number of Persons - Grievously Injured

25. Trucks/Lorries - Number of Persons - Minor Injured

26. Buses - Number of Road Accidents

27. Buses - Number of Persons – Killed

28. Buses - Number of Persons - Grievously Injured

29. Buses - Number of Persons - Minor Injured

30. Other non-motorized vehicle (E-rickshaw etc.) - Number of Road Accidents

31. Other non-motorized vehicle (E-rickshaw etc.) - Number of Persons – Killed

32. Other non-motorized vehicle (E-rickshaw etc.) - Number of Persons - Grievously Injured

33. Other non-motorized vehicle (E-rickshaw etc.) - Number of Persons - Minor Injured

34. Others - Number of Road Accidents

35. Others - Number of Persons – Killed

36. Others - Number of Persons - Grievously Injured

37. Others - Number of Persons - Minor Injured

38. Total - Number of Road Accidents

39. Total - Number of Persons – Killed

40. Total - Number of Persons - Grievously Injured

41. Total - Number of Persons - Minor Injured

Connect Data with Qlik Sense:

To connect data with Qlik Sense, you have multiple options:

- ✓ **Create a new data connection:** You can create a new data connection by using the data manager or the data load editor. This allows you to select data from various sources such as databases, social media data, local files, remote files, and web files.

✓ **Data connection types:** Qlik Sense supports various data connection types, including attached files, database connectors (available in Qlik Sense Enterprise only), and other connectors that can be added. Each data connection type has specific settings that need to be configured.

The way I connect to Data with Qlik sense:

○ Certainly! One method to connect data with Qlik Sense is by creating a new data connection using the data manager. Here's how you can do it:

○ Open your Qlik Sense app and navigate to the data manager.
   ○ In the data manager, click on the "Add data" button.
   ○ A dialog box will appear with various options to select your data source. Choose the appropriate option based on where your data is stored (e.g., database, local file, web file, etc.).
   ○ Follow the prompts to provide the necessary details for your data source, such as connection settings, authentication credentials, and file paths.
   ○ Once you have configured the data connection, you can preview the data and make any necessary transformations or associations.
   ○ Finally, click on the "Load data" button to load the data into your Qlik Sense app.

By creating a new data connection in the data manager, you can easily select and load data from the sources you commonly use. Remember, this is just one method, and there are other ways to connect data with Qlik Sense depending on your specific requirements.

<u>Data Preparation:</u>

Here is the way to prepare the dataset in step by step:

○ Dataset link: https://www.kaggle.com/datasets/aryakittukrishnasai/road accidents-in-india

Firstly login into Qlik sense cloud.

○ The Home page of Qlik data analytics will displayed. ◎ Next follow this this process:
   ● Click on "+ add new".
   ● drop down list appears; select "New Analytics App".
   ● A form will appear; give the name of the app as "Accident Data Analysis App" and keep remaining as it is.
   ● click on create.
   ● Then you will redirect into a newly created App.
   ● There you see "Files and Other Resources" > click it.
   ● Now Drag and drop all 9 datasets into qlik sense one by one.

- After adding one dataset, you will redirect to Data Manager.
- Later, all datasets are loaded, then click on "Apply All". To combine to one.
- If you want to change the dataset name or other you can go to associate table for updation.
  - ○ Here I changed the dataset names as
    - RA2019_A24.csv - Traffic Control Type.csv
    - RA2019_A25.csv - Weather.csv
    - RA2019_A26.csv - Accidents - Severity and Vehicles.csv
    - RA2019_A29.csv - Road Users Killed - Gender.csv
    - RA2019_A29a.csv - Pedestrians killed – Impacting
      vehicles.csv
    - RA2019_A29c.csv - Killed on Two Wheelers - Impacting vehicles.csv
    - RA2019_A32.csv - Pedestrians.csv
    - RA2019_A33.csv - Pedestrians killed.csv
    - RA2019_A35.csv - Causes.csv
- make sure that after any updation or modification your dataset you will click "Load Data" compalsary.
- Then your dataset is ready for visualization.

Data Visualization

Data visualization is the process of creating graphical representations of data to help people understand information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualization can help people identify patterns, trends, and outliers quickly in the data.
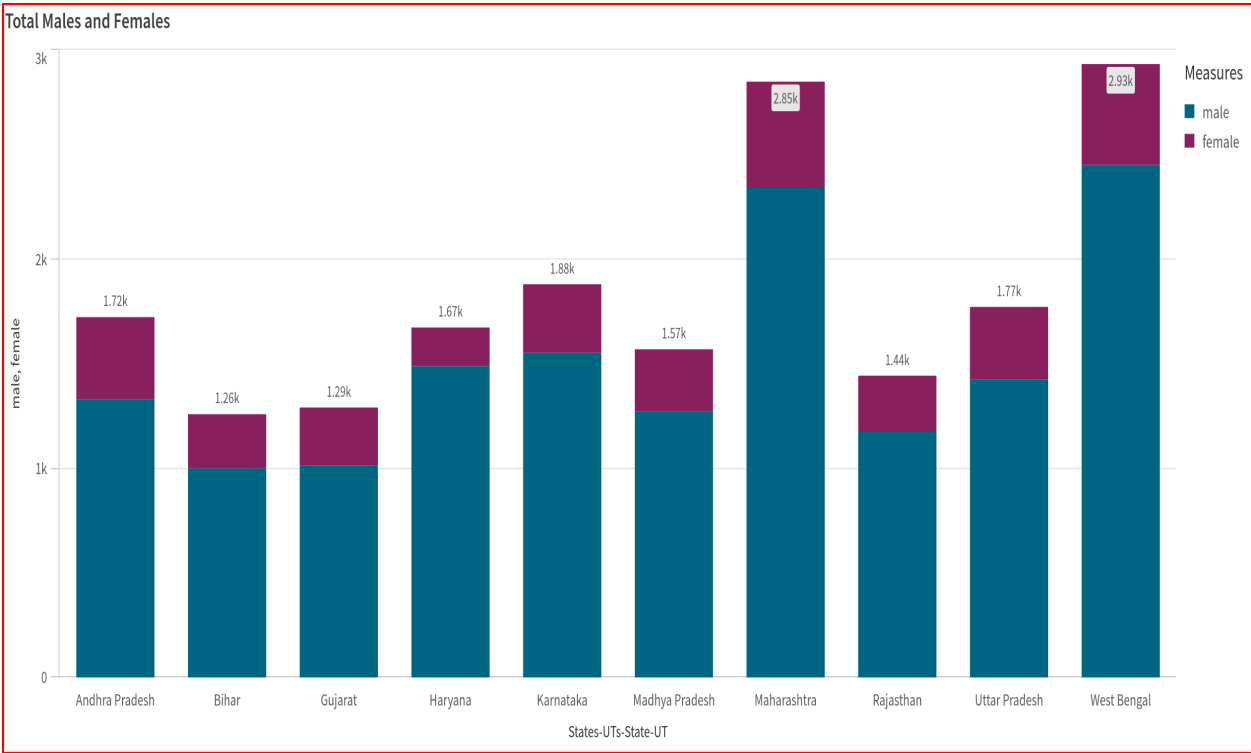
Number Of Unique Visualizations

The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyze include bar charts, line charts, heat maps, scatter plots, pie charts, maps, etc. These visualizations can be used to compare, track changes over time, show distribution, relationships between variables, breakdown of one category, and much more.

- Here is the Some Unique Visualizations of Qlik Analysis Of Road Safety And Accident Patterns In
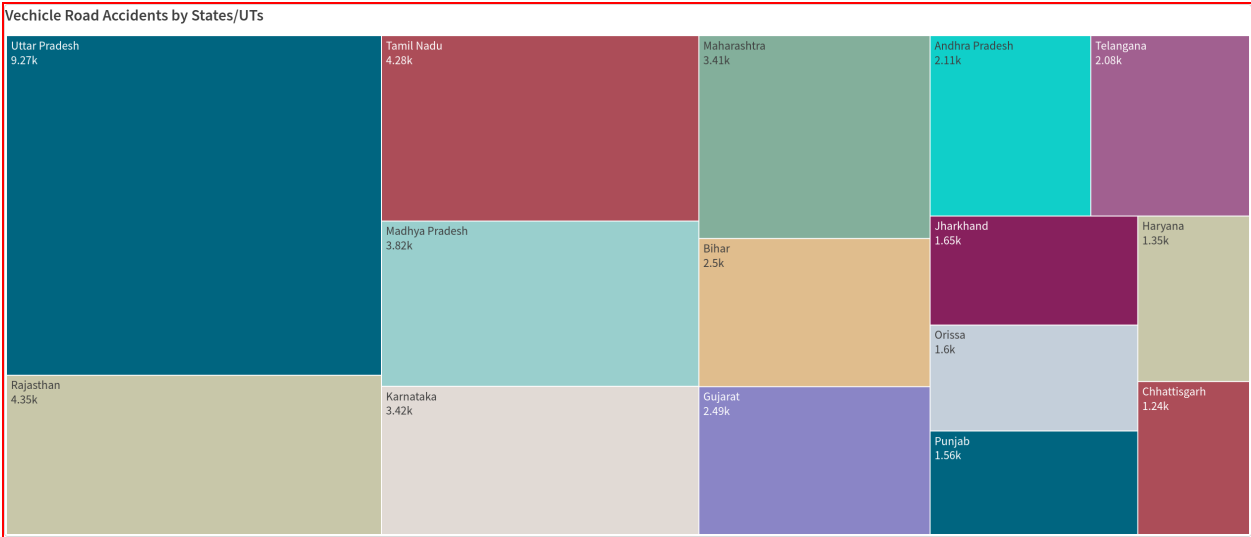
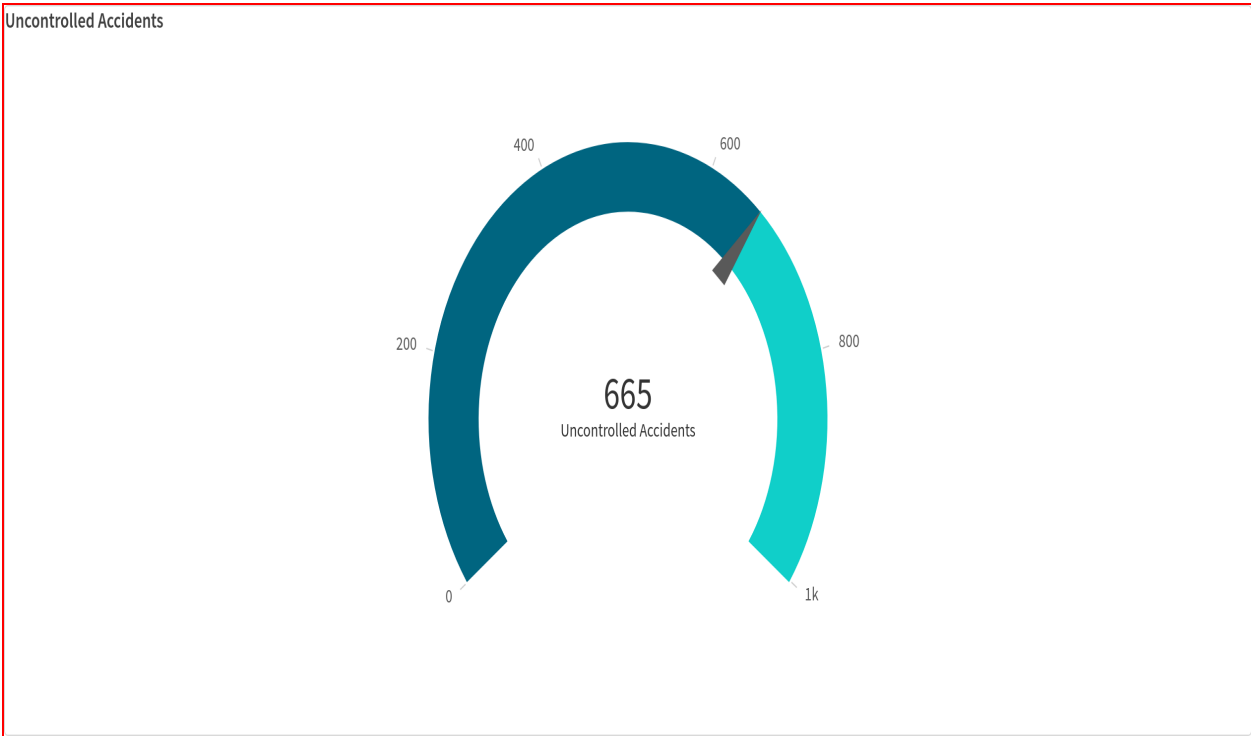## Visualization 1 : Total number of pedestrian females.

Total number of pedestrian females

States-UTs-State-UT
- Andhra Pradesh
- Gujarat
- Karnataka
- Kerala
- Madhya Pradesh
- Maharashtra
- Tamil Nadu
- Telangana
- Uttar Pradesh
- West Bengal

States/UTs	Female
Maharashtra	505
West Bengal	483
Tamil Nadu	412
Andhra Pradesh	392
Uttar Pradesh	347
Karnataka	328
Madhya Pradesh	297
Telangana	292
Kerala	282
Gujarat	276
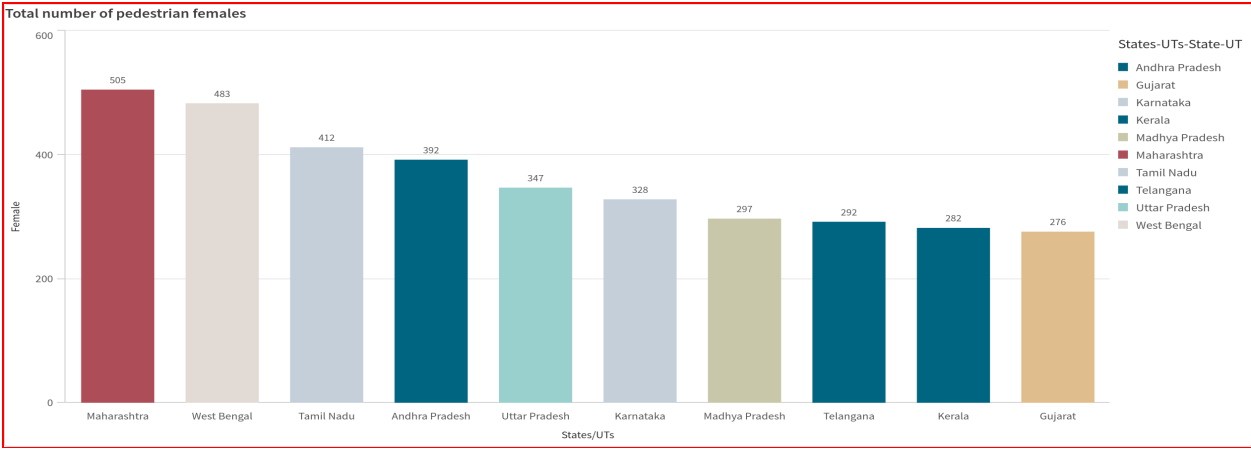
Visualization 2 : Total Males and Females

Total Males and Females

Measures
- male
- female

States-UTs-State-UT	male, female
Andhra Pradesh	1.72k
Bihar	1.26k
Gujarat	1.29k
Haryana	1.67k
Karnataka	1.88k
Madhya Pradesh	1.57k
Maharashtra	2.85k
Rajasthan	1.44k
Uttar Pradesh	1.77k
West Bengal	2.93k

Visualization 3 : Vechile Road Accidents by states/UTs

Vechicle Road Accidents by States/UTs

Uttar Pradesh 9.27k	Tamil Nadu 4.28k	Maharashtra 3.41k	Andhra Pradesh 2.11k	Telangana 2.08k
	Madhya Pradesh 3.82k	Bihar 2.5k	Jharkhand 1.65k	Haryana 1.35k
			Orissa 1.6k	
Rajasthan 4.35k	Karnataka 3.42k	Gujarat 2.49k	Punjab 1.56k	Chhattisgarh 1.24k

Visualization 4 : Uncontrolled Accidents

Uncontrolled Accidents

400   600

200   800

665
Uncontrolled Accidents

0   1k

Visualization 5 : Total Vehicles By States/UTs

Total Vehicles By States/UTs
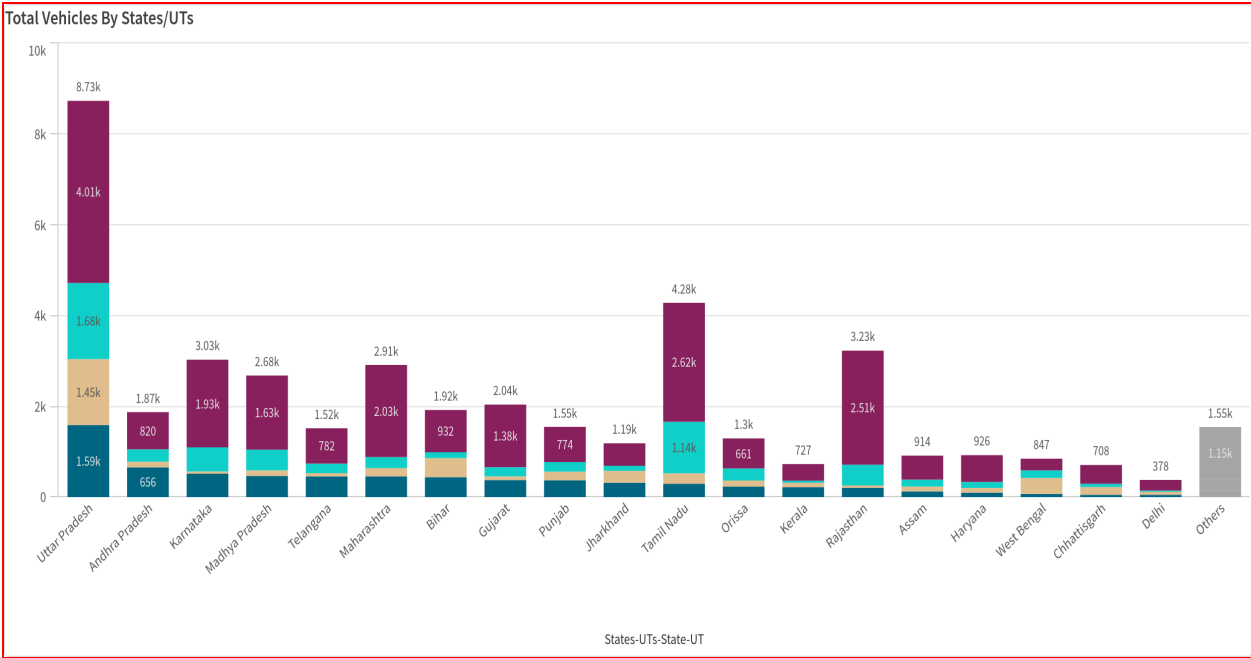
Visualization 6 : Total Kills and Accidents

Total kills and Accidents
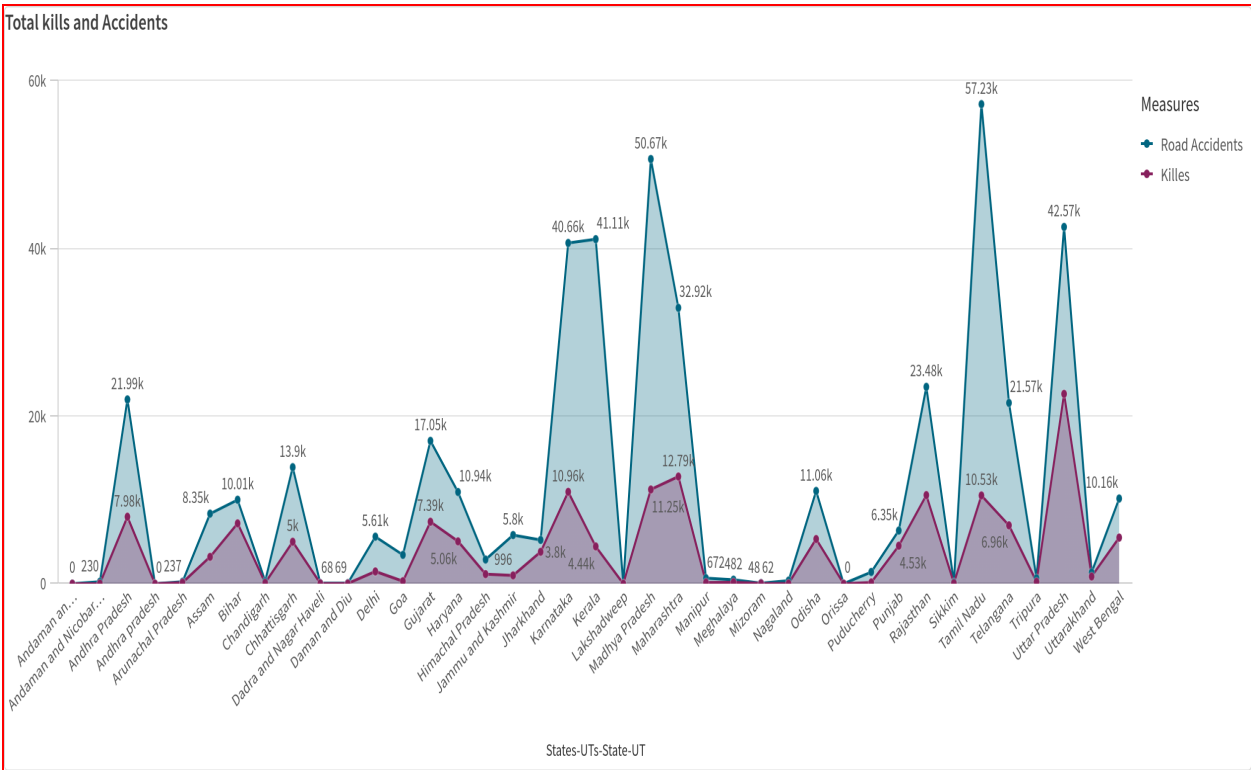
Visualization 7 : Total Females Killed based Age by State/UTs
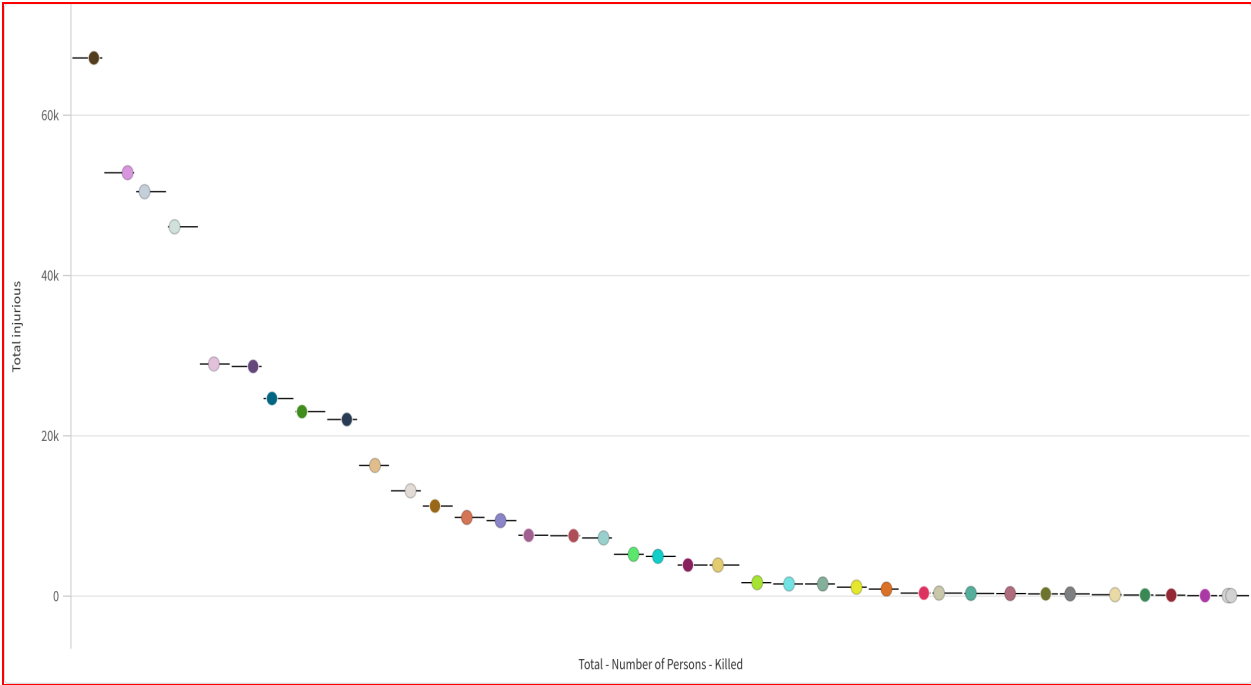

Total Females Killed based on Age by State/UTs

Legend: Total Females | Lessthan 18 Years | 18 - 25 Years | 25-35 Years | 35-45 Years | 45-60 Years | 60 and Above | Others
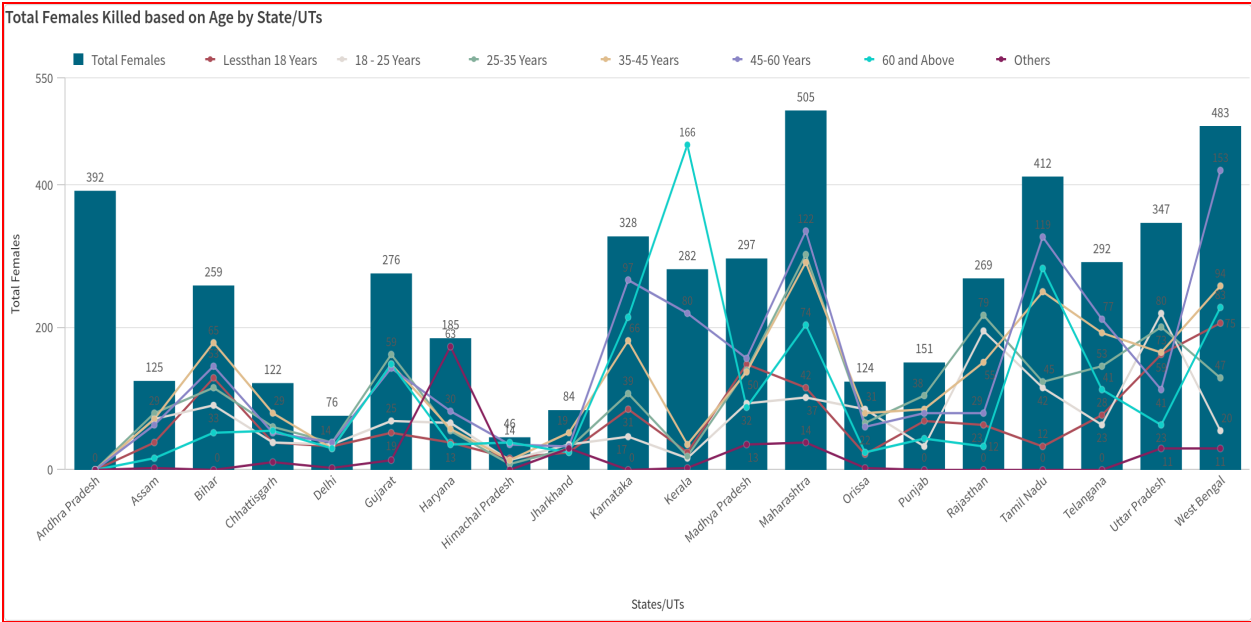
Visualization 8 : Total Males Killed based on Age by States/UTs

Total Males Killed based on Age by States/UTs

Legend: Males | lessthan 18 | 18-25 Years | 25-35 Years | 35-45 Years | 45-60 Years | 60+ Years | Others
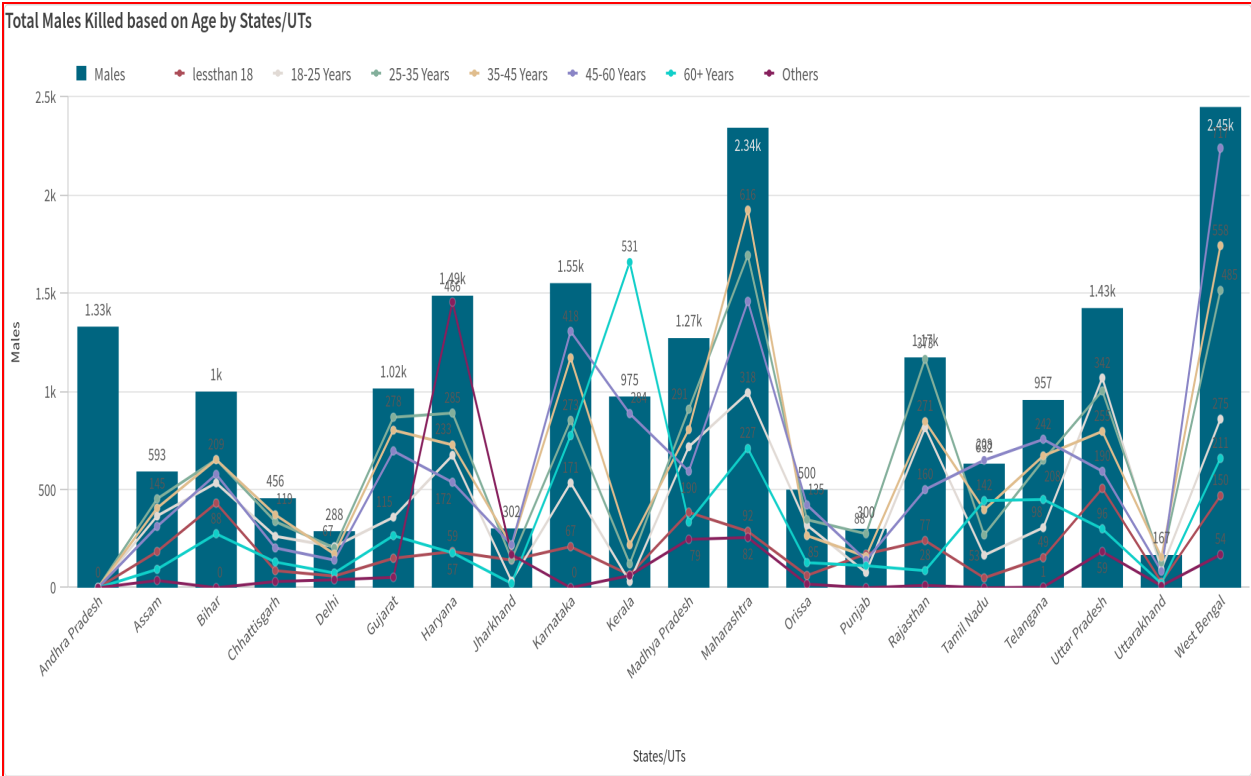
Visualization 9 : Total injuries due to Foggy/Misty

Total Injuries due to Foggy/Misty

States/UTs
Area layer

Foggy and
Misty Injuries
6.04k

0

500 km

© OpenStreetMap contributors
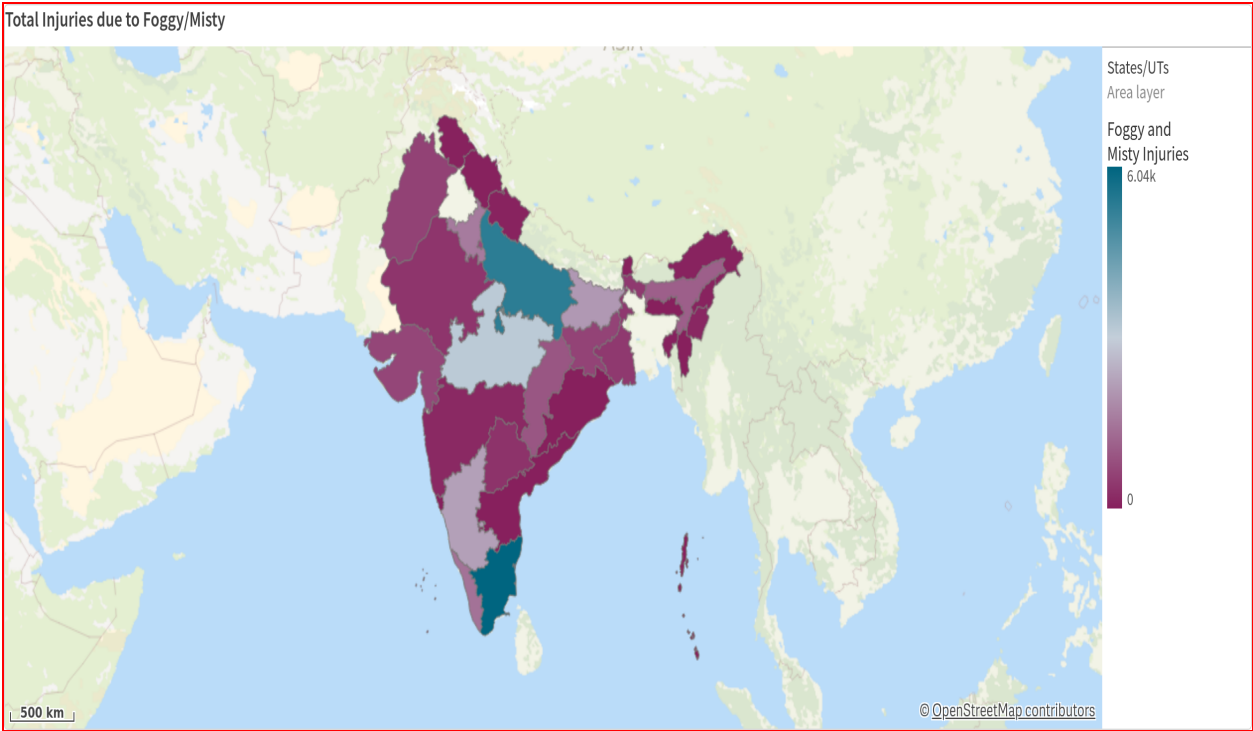
Visualization 10 : Jumping Rwd Light Accidents and Deaths

Jumping Red Light Accidents and deaths
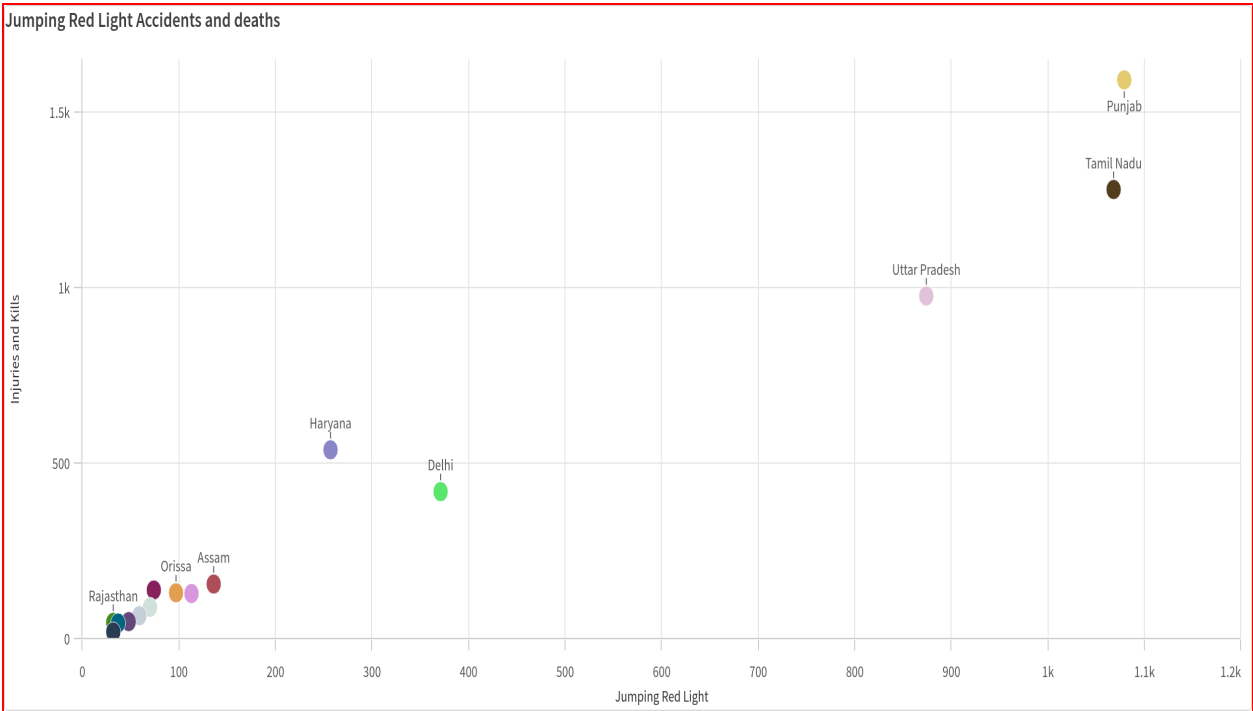
Visualization 11 : Total Kills by Injuries based on States/UTs

Total injurious (y-axis): 0, 20k, 40k, 60k

Total - Number of Persons - Killed (x-axis)

Visualization 12: Number of Persons injured by Stateswise

Nmber of persons injuried by

- Tamil Nadu 14.9%
- Madhya Pradesh 11.7%
- Karnataka 11.2%
- Kerala 10.2%
- Uttar Pradesh 6.4%
- Maharashtra 6.3%
- Andhra Pradesh 5.5%
- Rajasthan 5.1%
- Telangana 4.9%
- Others 23.9%
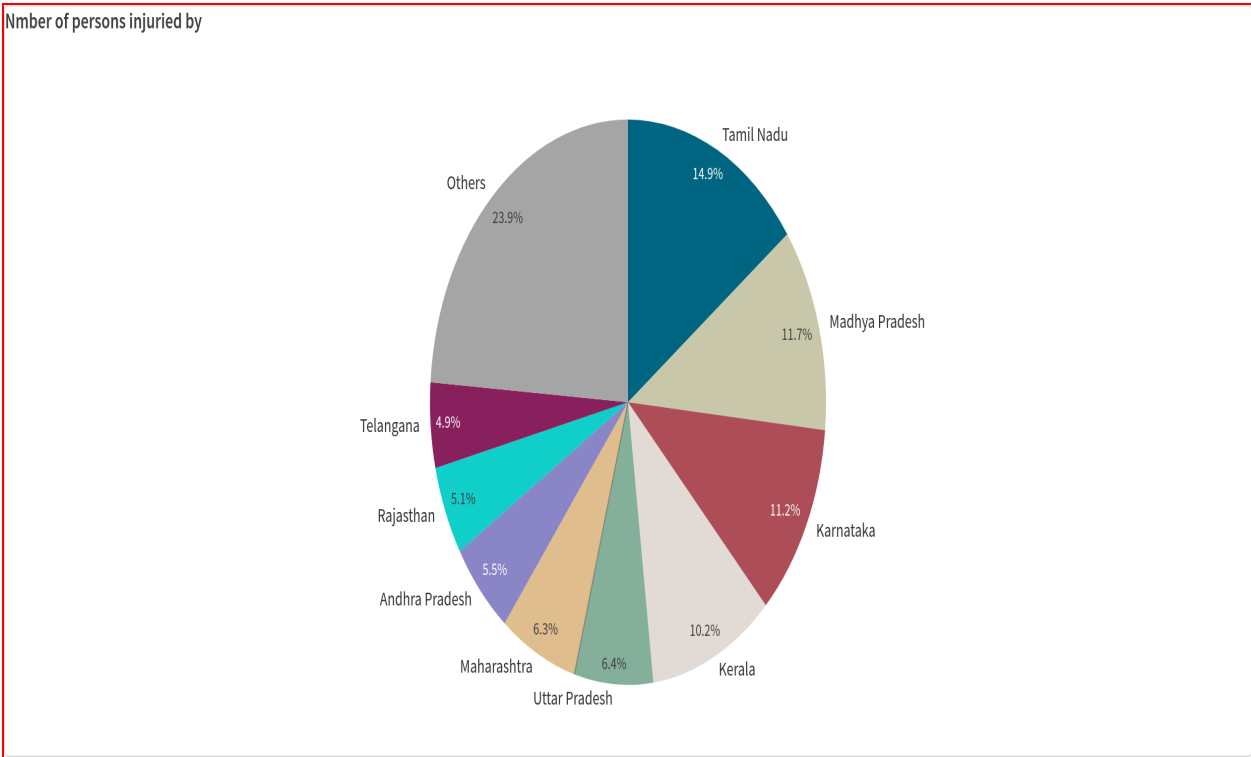
Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an organized and easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data.

They are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

Let us see the details of the **Interactive Road Safety Dashboard** shown in the above dashboard:

Full Responsive Dashboard :
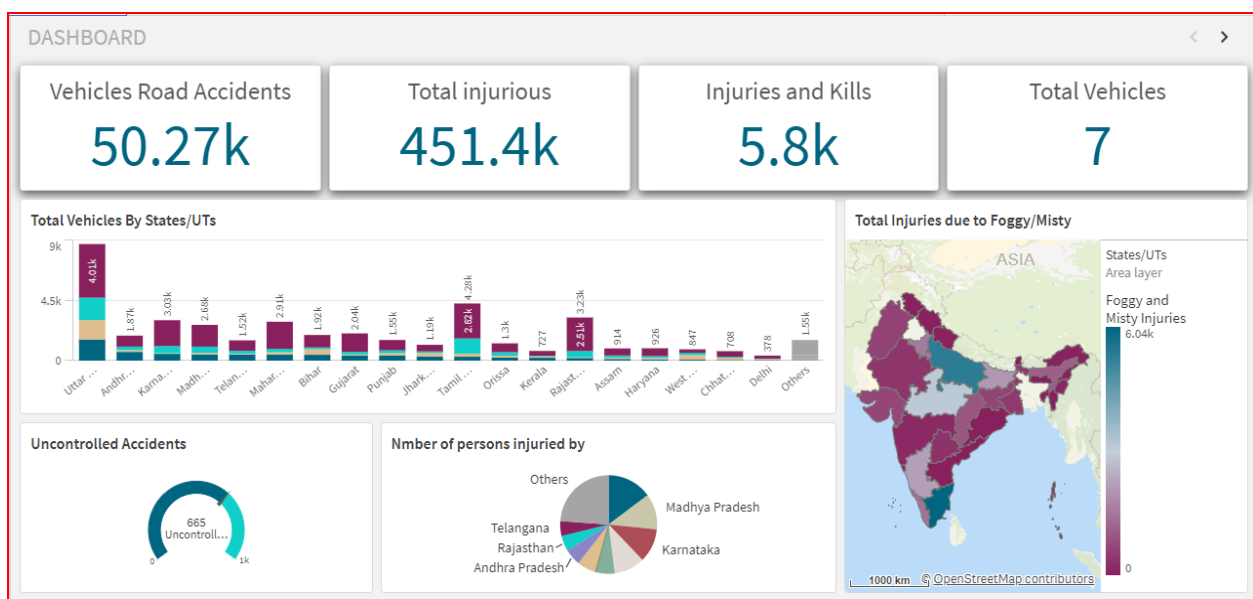
Responsive Dashboard when I clicked on Rajesthan then whole dashboard change:
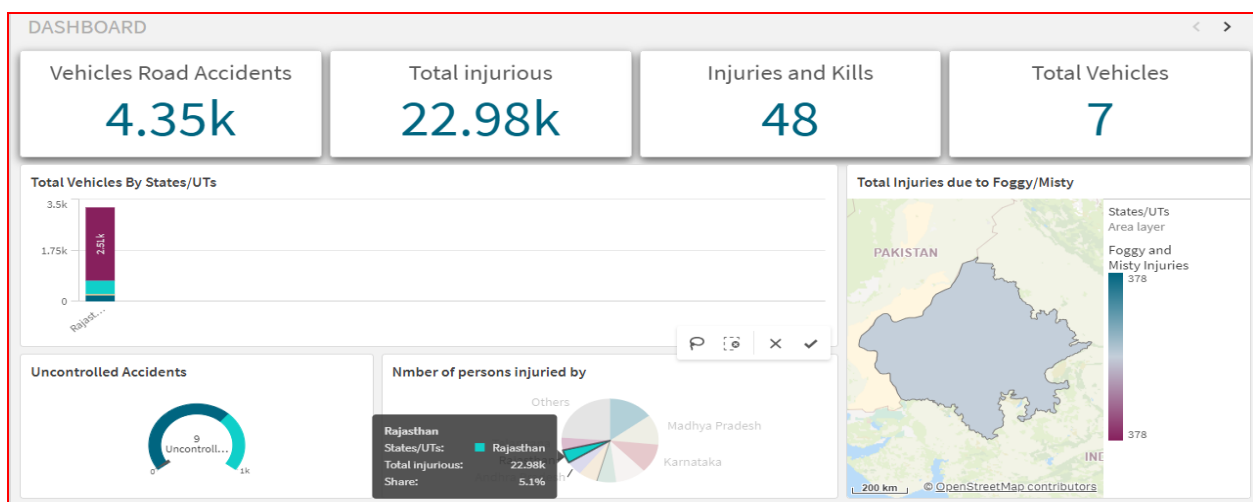
Let's delve into the details of the Road Safety Dashboard depicted in the image:

1. **Key Metrics:**
   - **Total Road Accidents:** The dashboard displays a count of 50.27k road accidents.
   - **Total Injuries:** There have been 451.4k injuries due to these accidents.
   - **Injuries and Kills:** A total of 5.8k injuries or fatalities have occurred.
   - **Total Vehicles Involved:** The dashboard indicates 7 vehicles involved in these incidents.

2. **Visualizations:**
   - **Total Vehicles by States/UTs (Bar Chart):**
     - This bar chart likely represents different states or union territories, with bars indicating vehicle counts. Unfortunately, specific values are not visible in the image.
   - **Number of Persons Injured by Others (Bar Chart):**
     - This second bar chart categorizes injuries by different regions (e.g., 'Others,' 'Rajasthan,' 'Telangana,' etc.). The varying lengths of bars correspond to injury numbers.
   - **Total Injuries by State/UTs (World Map):**
     - The map color-codes regions (primarily Asia) based on injury counts. Purple tones indicate varying levels of injuries across countries.

3. **Insights and Implications:**
   - **High-Risk Areas:** Identify states or regions with frequent accidents.
   - **Pedestrian Safety:** Investigate injuries related to pedestrians.
   - **Traffic Control:** Analyze effectiveness for better road management.
   - **Mobile Usage:** Address distractions to reduce accidents.

Story:

Story Creation

A data story is a way of presenting data and analysis in a narrative format, with the goal of making information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of media, such as reports, presentations, interactive visualizations, and videos.

➤ Navigate to "Narrate Storytelling" to create.
➤ By default one blank sheet is appear.
➤ Start doing Storytelling from existing visualizations.
➤ To get existing visualization we use snapshot library for import.
➤ we can add text, paragraph, symbols etc.., for better understanding.
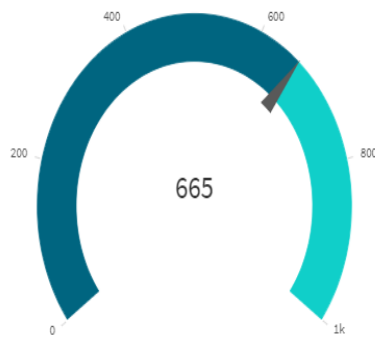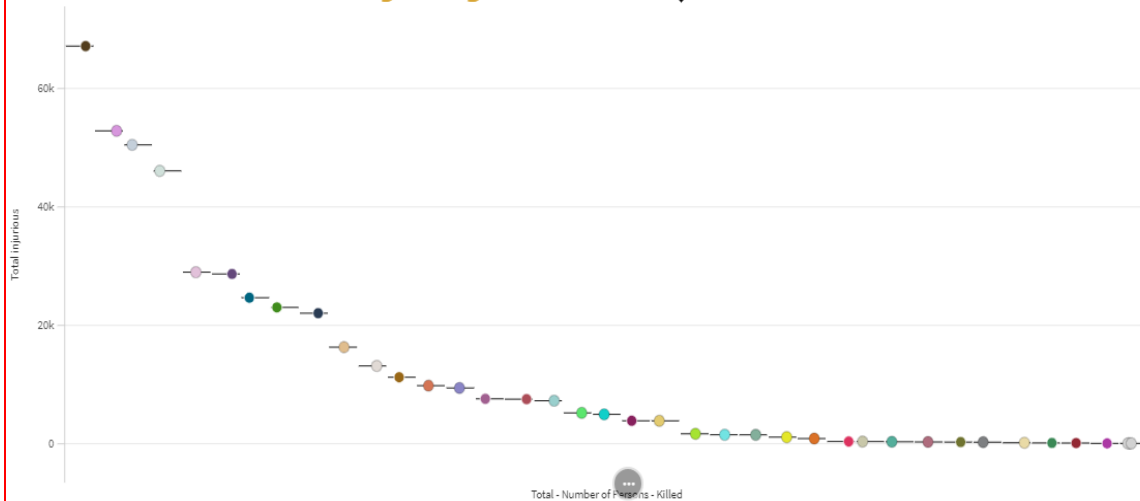➤ Here is the Storytelling for Road safety Accidents in India
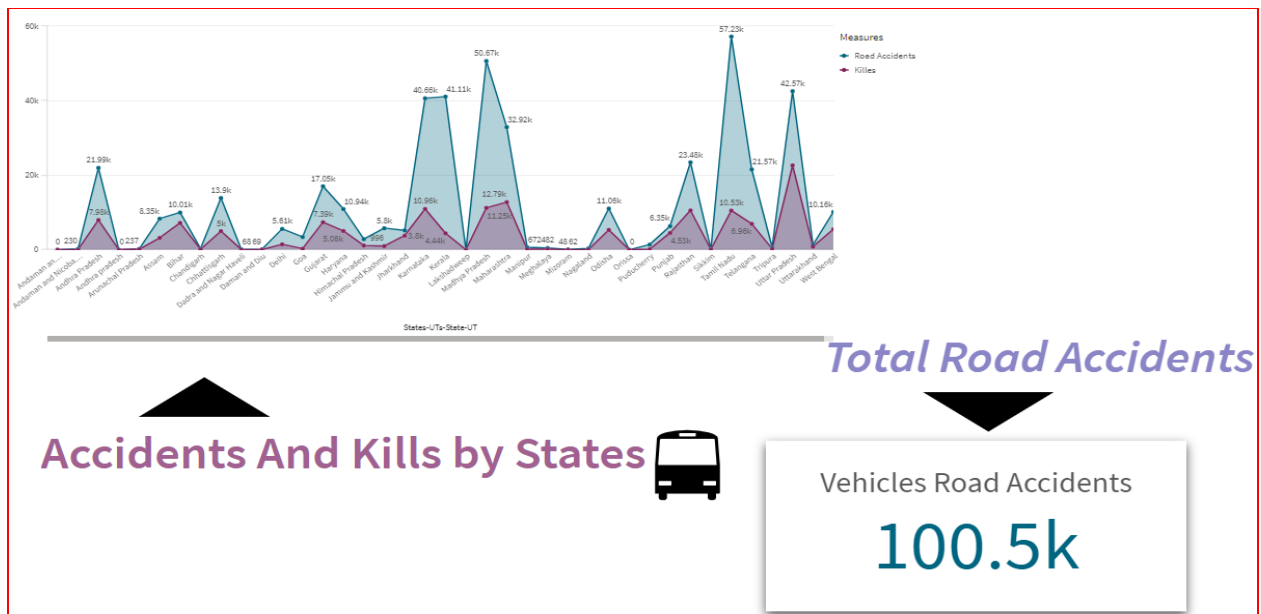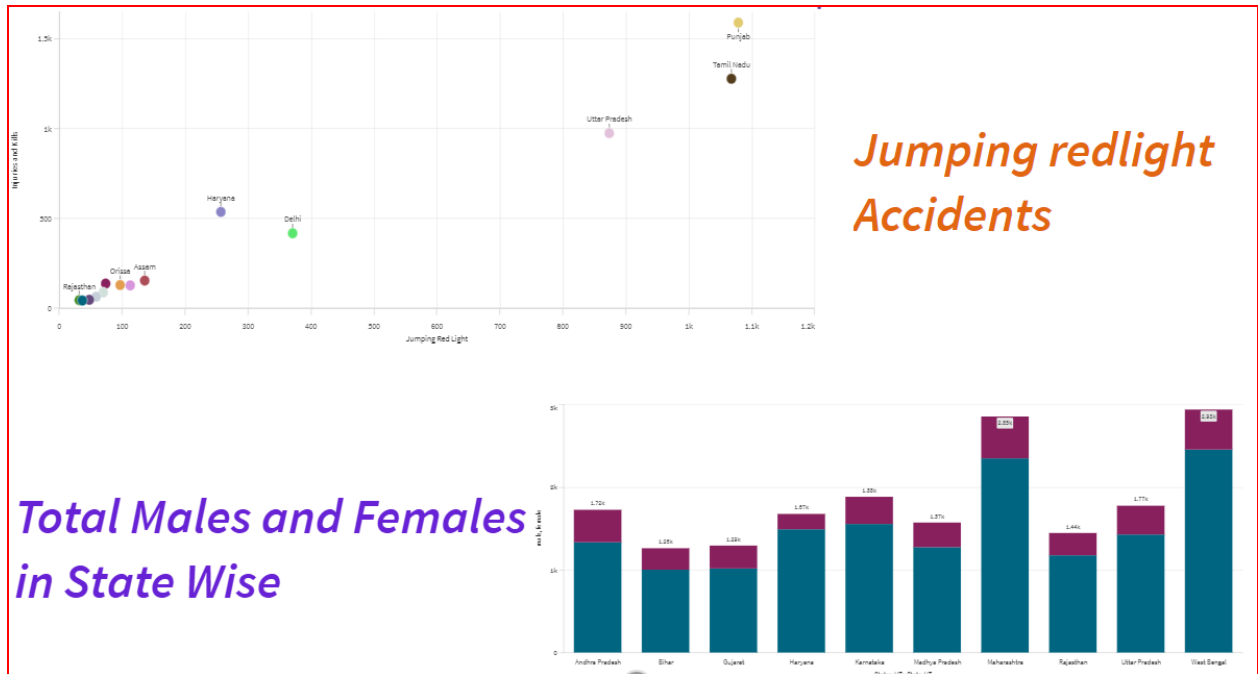
Injuries in all states

Total kills by injuries

Total injurious
902.7k

Injuries and Kills
11.61k

Uncontrolled Accidents

Total Kills and Injuries in India

Jumping redlight Accidents

Total Males and Females in State Wise
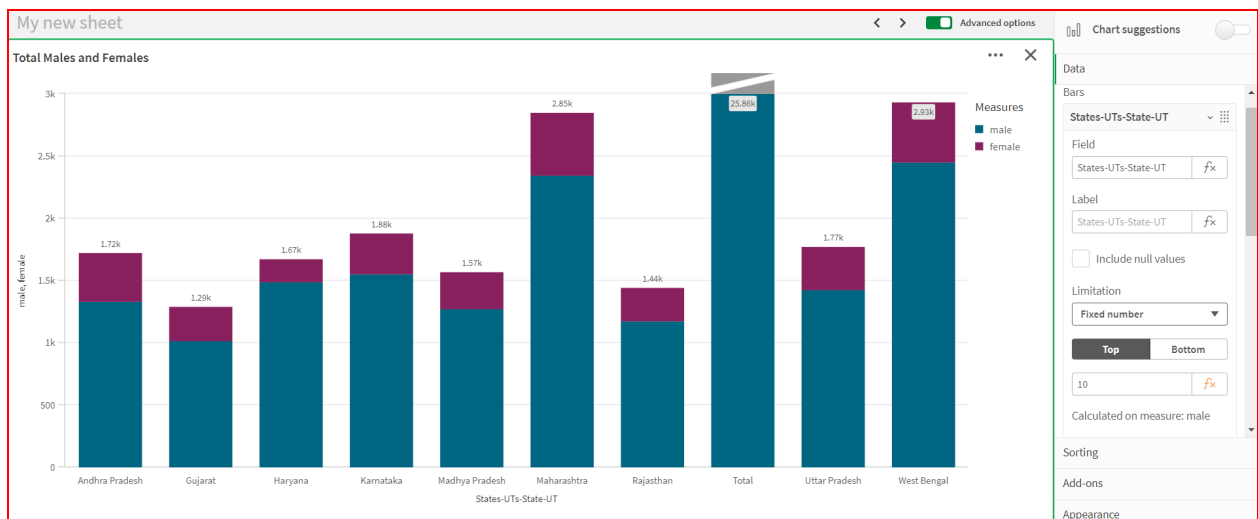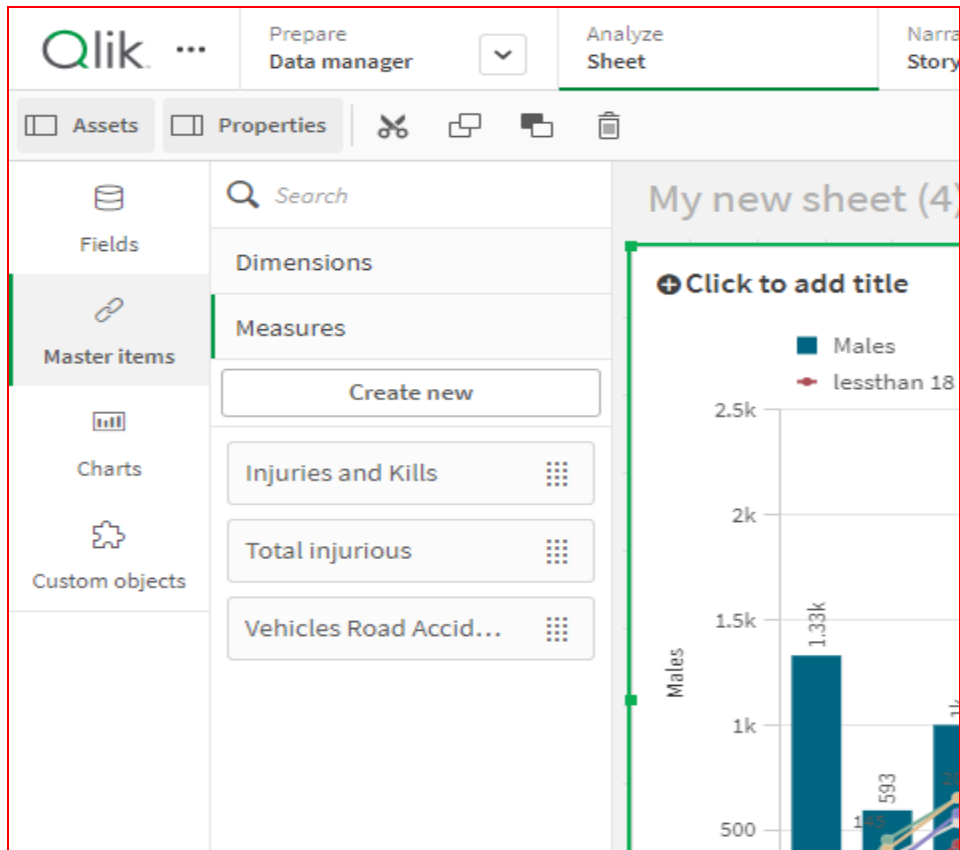
Performance Testing

Application of Data Filters:

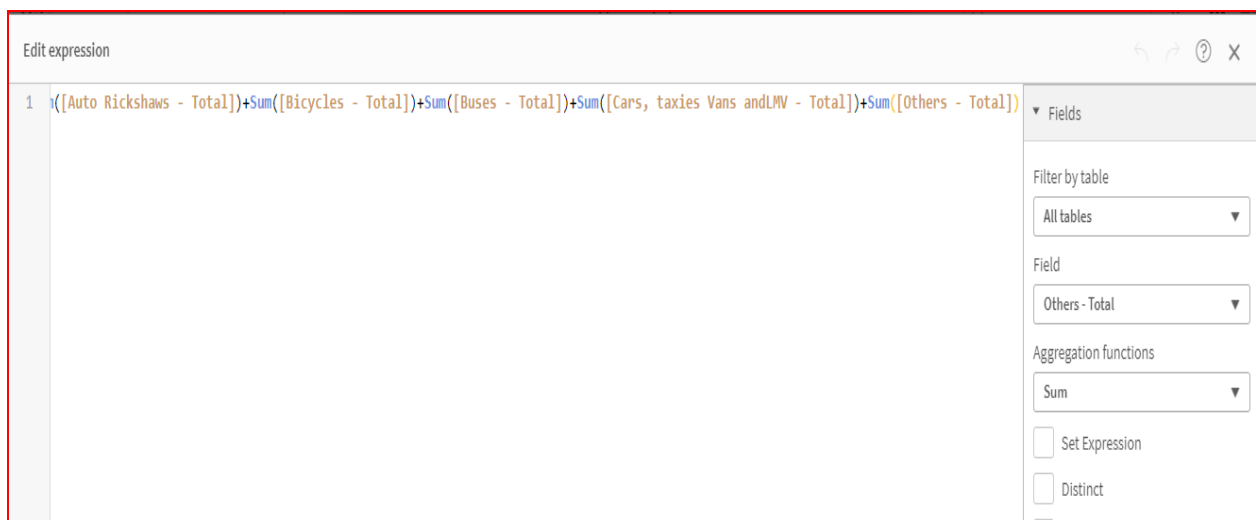1. Here the one data filter which
   a. Fixed Number = 10

Use of Master Items/Calculated Fields:

1. Created Master Measures and Dimensions for visualizations

2. Used Expression :

Number of Visualizations/Graphs:

1. Total number of pedestrian females
2. Total Males and Females
3. Vechicle Road Accidents by States/UTs
4. Uncontrolled Accidents
5. Total Vehicles By States/UTs
6. Total kills and Accidents
7. Total Females Killed based on Age by State/UTs
8. Total Males Killed based on Age by States/UTs
9. Total Injuries due to Foggy/Misty
10. Jumping Red Light Accidents and deaths
11. Total Kills by Injuries based on States/UTs
12. Number of Persons injured by Stateswise
13. Total number of pedestrian males