Project Report Titles:

1.Introductions:

1.1 Overview: The project's objective is to examine road safety and accident trends in India through the utilization of Qlik Sense. Through the use of data visualization, the project aims to pinpoint high-risk zones, comprehend the reasons behind accidents, and offer practical recommendations to improve road safety. The project will encompass tasks such as data gathering, processing, visualization, and performance evaluation to guarantee a thorough and effective resolution.

1.2 Purpose: The main objective of this project is to:

- Detect Accident Hotspots: Utilize heat maps and location-based analysis to identify areas with high accident rates.
- Explore Demographic Impact: Examine how various age groups are impacted by accidents.
- Enhance Road Safety: Offer valuable insights to assist in developing policies and initiatives to decrease accidents and fatalities.
- Data-Driven Decision-Making: Empower authorities and stakeholders to make well-informed decisions using visualized data insights.

1.3 Technical Architecture:

The project's technical architecture comprises several essential components within the Qlik Sense environment, spanning from data collection to visualization.

1. Data Collection:

Data Sources: The project utilizes CSV files that contain accident data
Data Upload: These files are uploaded to Qlik Sense for further processing.

2. Data Preparation:

Under Data Preparation, the data is cleaned under the Data Manager option by using the edit option and many other tools.

3. Data Visualization:

Qlik Sense Visualizations: The project leverages Qlik Sense's visualization tools to create various visualizations, including:

- Heat maps for displaying the geographic distribution of accidents.
- Bar charts for analyzing different age groups.
- Line charts for examining trends.

- Pie charts for visualizing pedestrian fatalities.
- Scatter plots for exploring the correlation between accident severity and location.

4. Dashboard Design:

-User Interface: The project incorporates a responsive dashboard that is designed for ease of use and interactivity.
-Interactive Filters: Users can filter the data based on date, location, age group, and severity.
-Responsive Design: The dashboard is designed to ensure accessibility across various devices.

5. Story Creation:

-Storytelling Feature: Qlik Sense's storytelling capability is utilized to create narratives using snapshots of visualizations.
-Narrative Flow: The project highlights key insights and recommendations through a well-structured narrative flow.

2.Define Problem/Problem Understanding:

2.1 Specify the Business problem:

The objective is to assist road safety and accident trends in India in order to pinpoint high-risk zones, comprehend the root causes of accidents, and propose strategies for mitigation.

2.2 Business Requirement:

Evaluate the frequency and distribution of accidents based on location, age demographics, and other pertinent variables; Track patterns over time and Provide actionable insights to improve road safety.

2.3 Literature Survey:

-Review existing studies on road safety and accident patterns.
-Examine statistical models and visualization techniques used in similar projects.
-Assess current policies and their effectiveness in accident reduction.

2.4 Social or Business Impact:

-Improved road safety measures can reduce fatalities and injuries.
-Better resource allocation for traffic management.
-Enhanced public awareness and education on road safety.

3.Data Collection:

3.1 Collect the Dataset:
Downloaded the dataset from the given link and extracted it

3.2 Connect Data with Qlik Sense:
Uploaded the data in qlik sense, ensuring the accuracy.

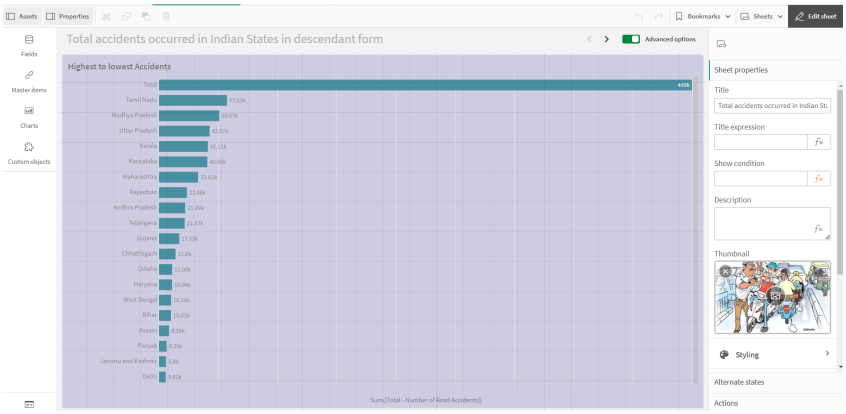
4.Data Preparation:

4.1 Prepare the Data for Visualization:
-Cleaned and pre processed the data - handled missing values, standardized formats, and created necessary calculated fields.
-Also made sure the associations were made

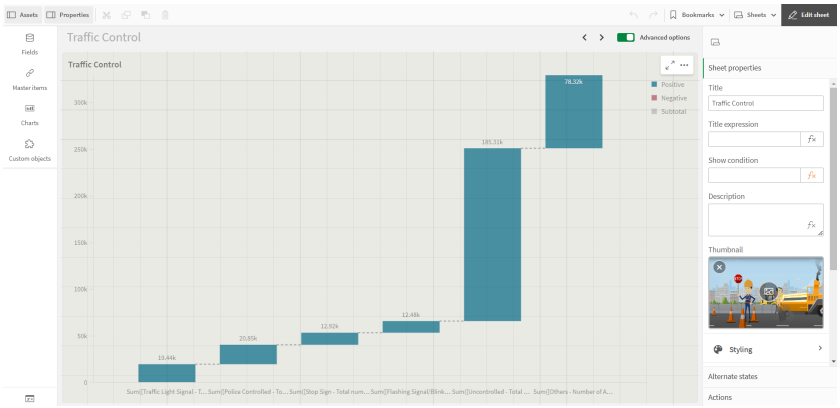
5.Data Visualizations:

5.1 Number of Unique Visualizations:
I have created 12 unique Visualizations. Below is the list given

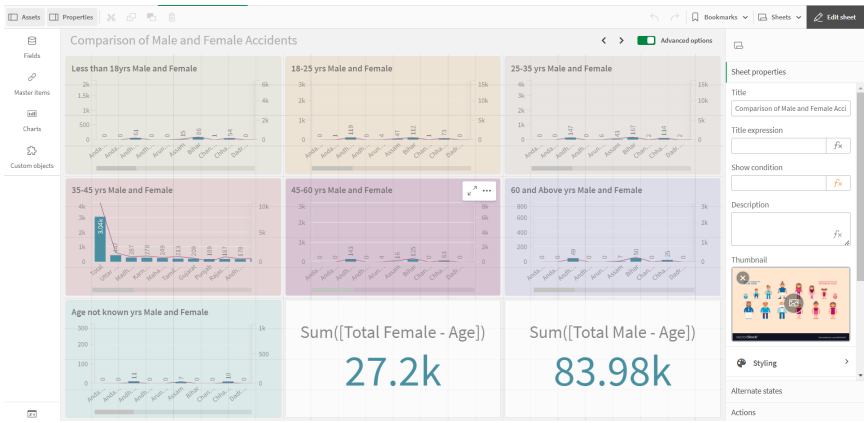
-Total accidents occurred in Indian States in descendant form



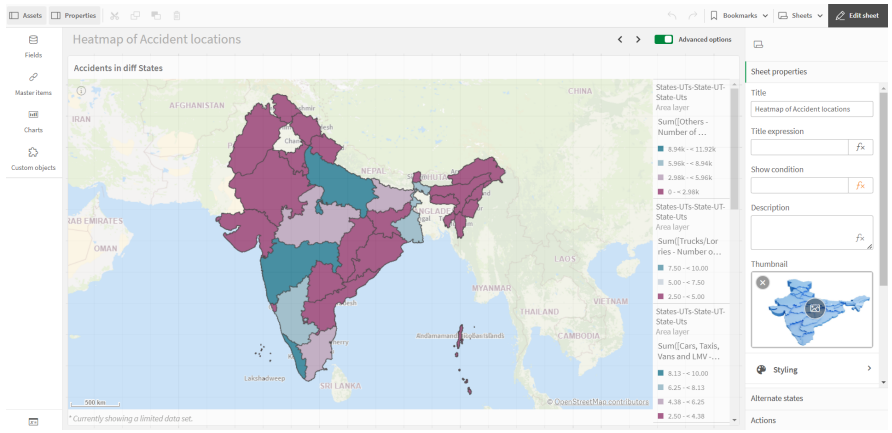
-Traffic Control



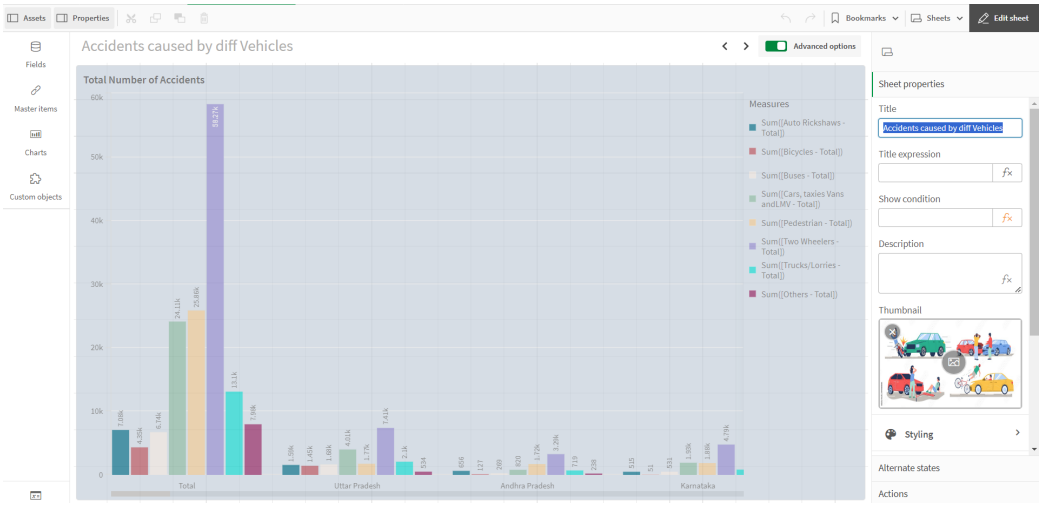
-Comparison of Male and Female Accidents



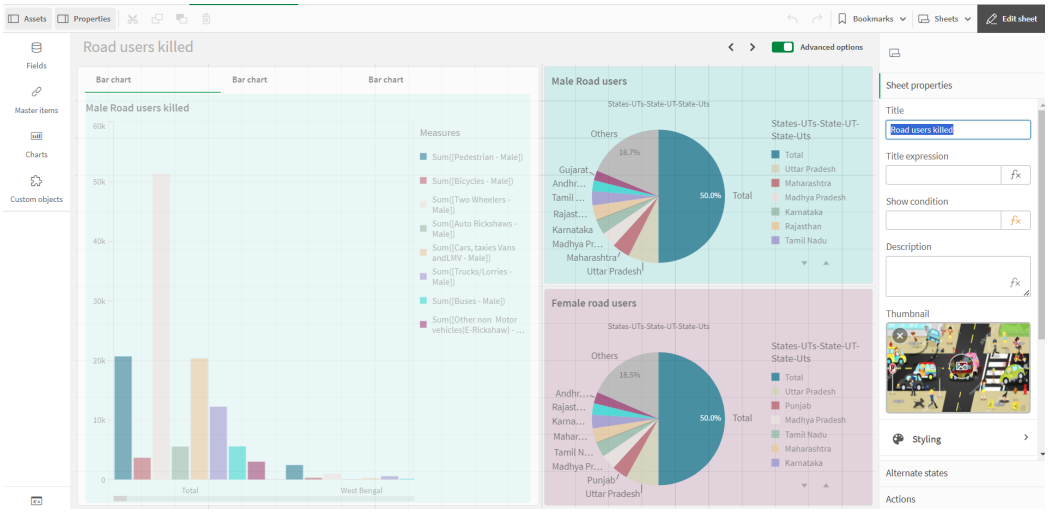
-Heatmap of Accident locations



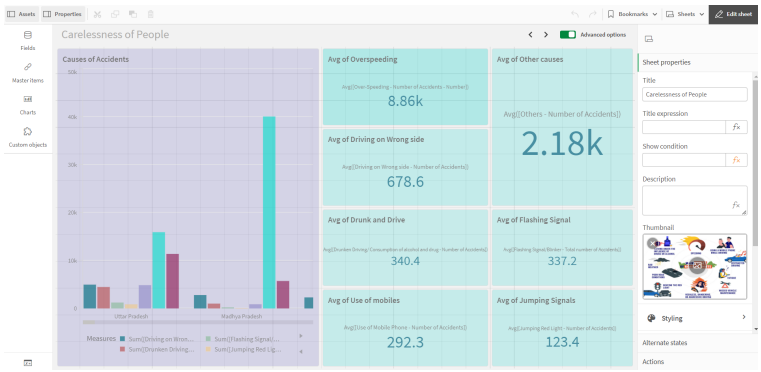
-Accidents caused by different Vehicles



-Road users killed

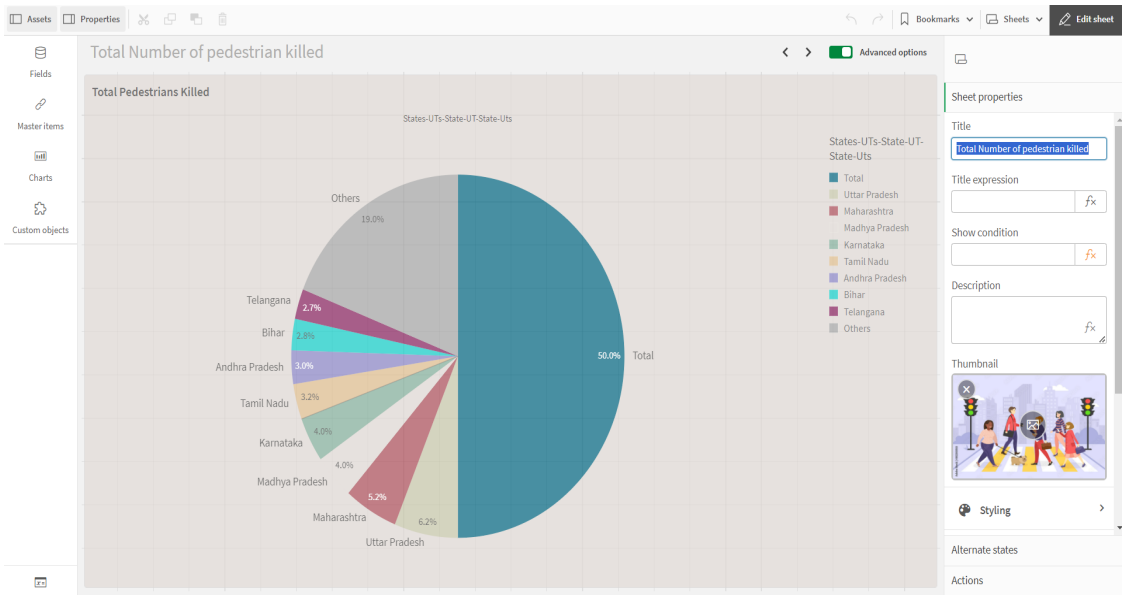


- Carelessness of People

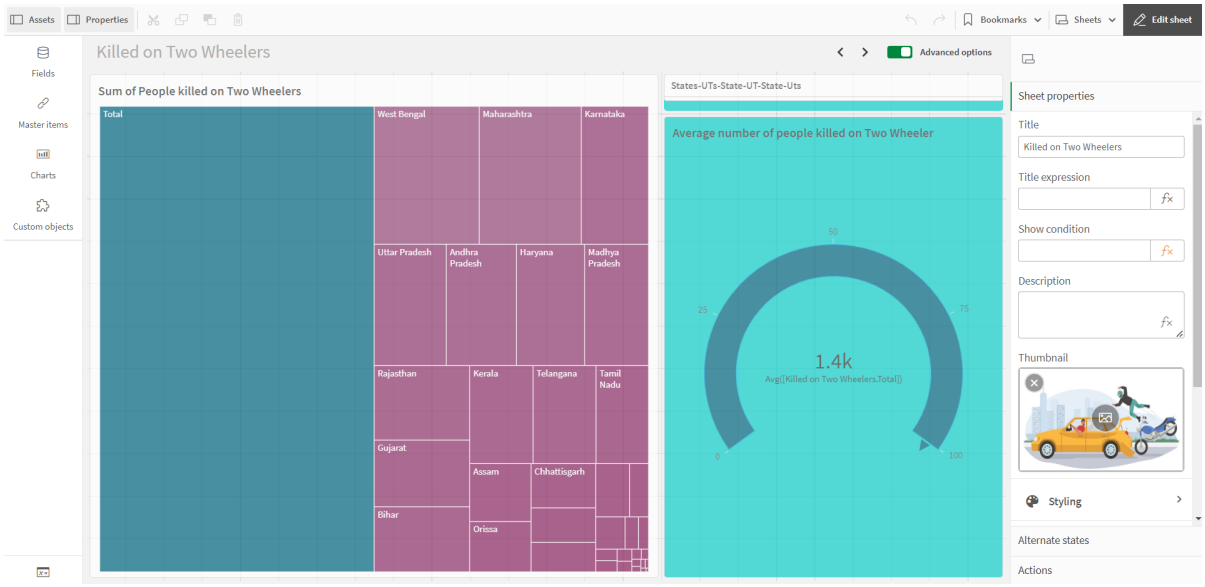


- Accidents as per age

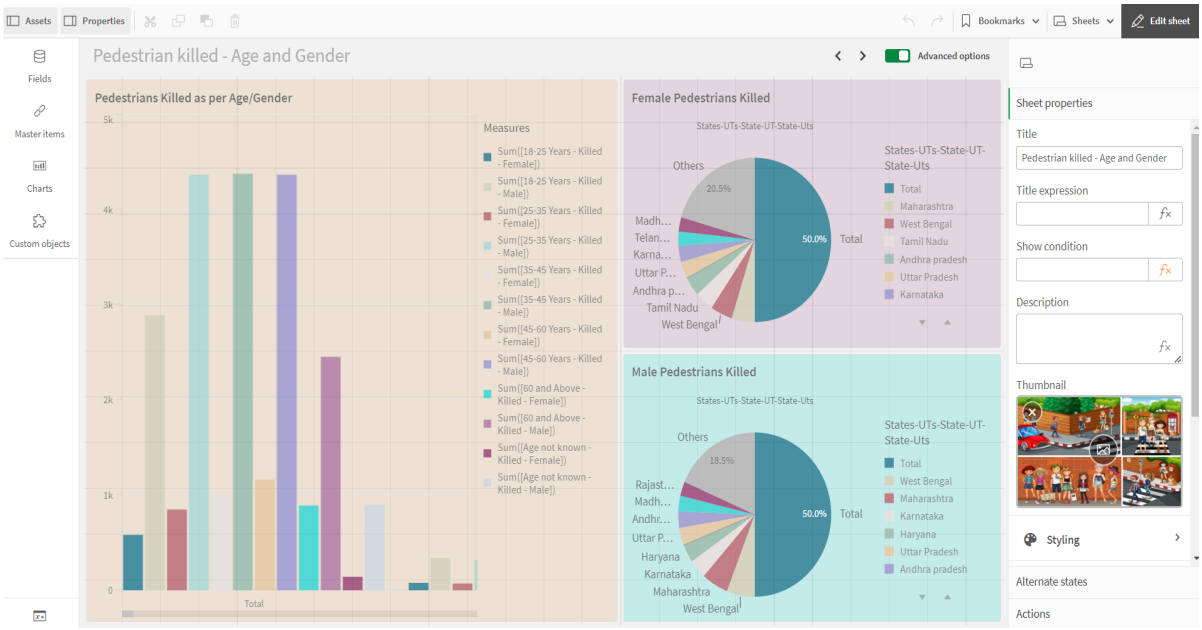
- Total Number of pedestrian killed



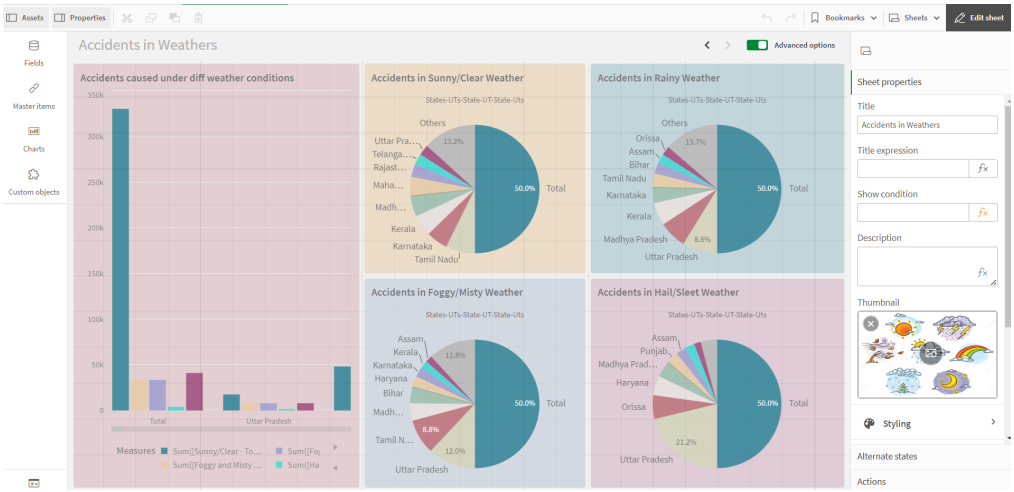
- Killed onTwo-Wheeler



- Pedestrian killed - Age and Gender



- **Accidents in Weathers**



6. Dashboard:

6.1 Responsive and Design of Dashboard:

- I have used this feature in a few of my Visualizations to create a user-friendly dashboard layout. I ensured it is working well. I have included filters in a few of the visualizations for detailed dashboards

7.Story:

7.1 Story creation:

I have created a story with 12 slides, It includes the overview of my visualizations. I have created a PDF and uploaded In GIT hub for refernce

8.Performance Testing:

8.1 Amount of Data Rendered to DB:

I have rechecked all the visualizations and they are working fine.

8.2 Utilization of Data Filters:

I have added filters here and there for easy understanding of the data

8.3 Number of Calculation Fields/Master Items:

I have added few calculated field for easy data collection of visualizations

8.4 Number of Visualizations/Graphs:

They are about 12 Visualizations and about 10 of them have multiple graphs