



IMPACT OF WEATHER & COVID ON ACCIDENTS

GROUP 9

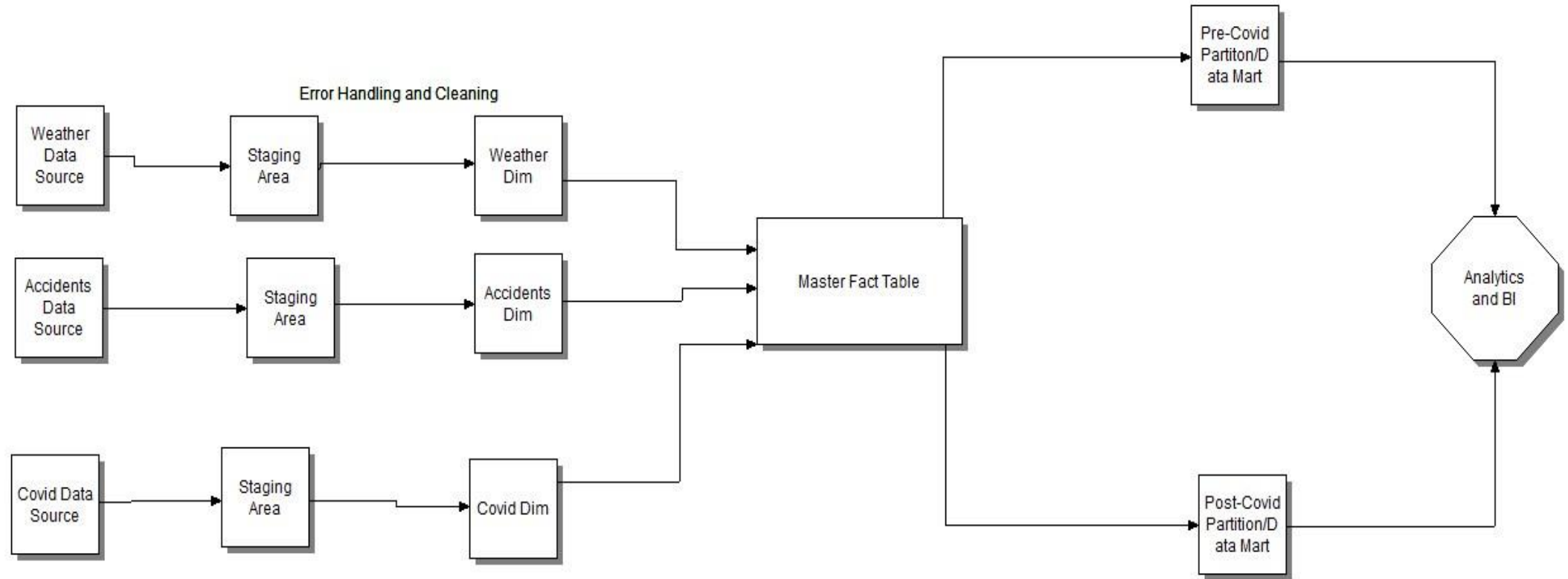
OBJECTIVE

- To understand the effects of weather on traffic in general, and how those effects were affected due to Covid. Also, what the impact of lockdown has been on the weather, and if there are any significant changes in the weather events because of Covid.
- Some questions about the data include
- What type of events have caused the most accidents?
- What effects did the Coronavirus have on traffic and accidents (whether they went down, increased due to stress, etc.)?
- What impact did the Coronavirus have on the environment, and if so, in what form is it manifesting?

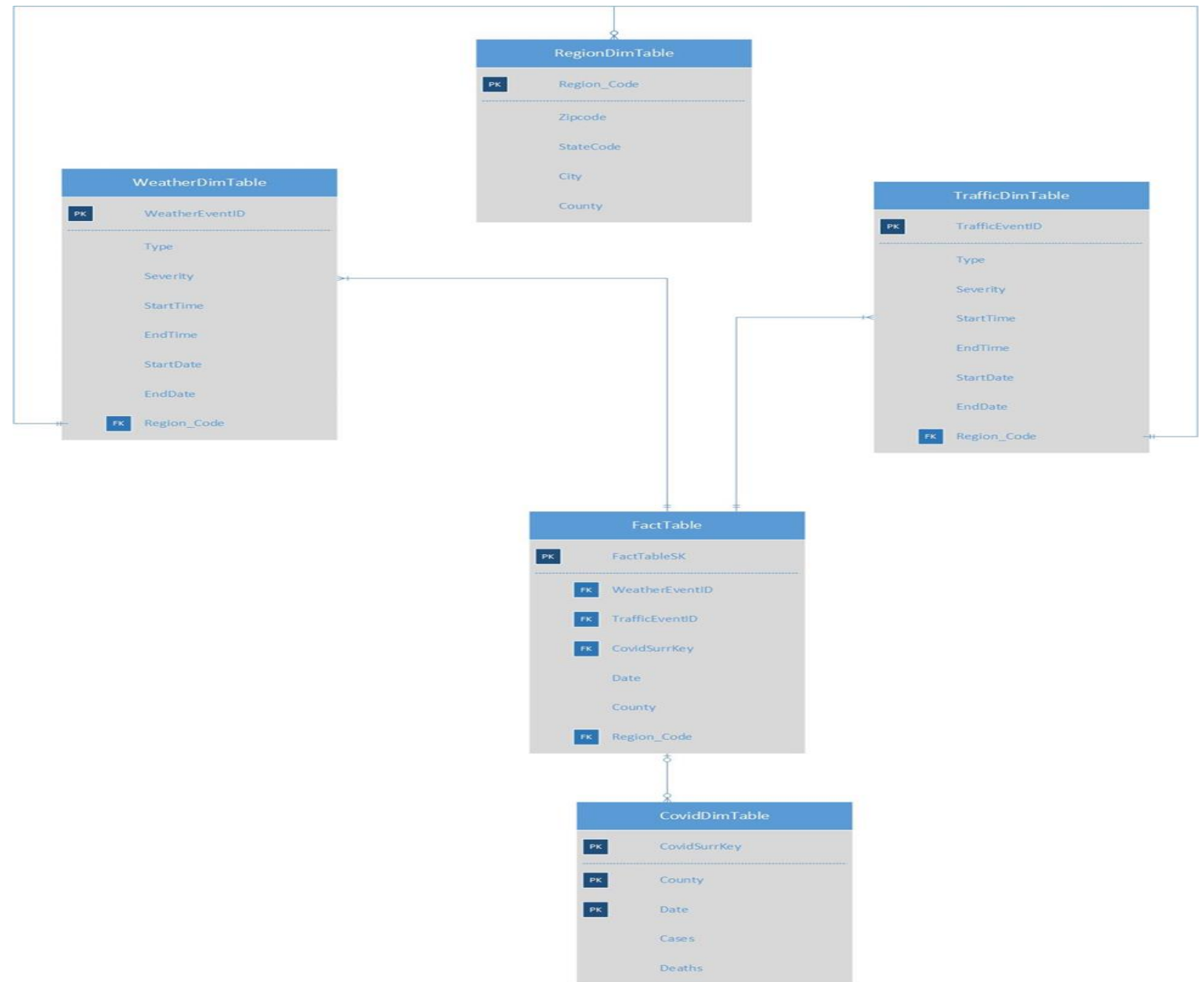
DATA SOURCES

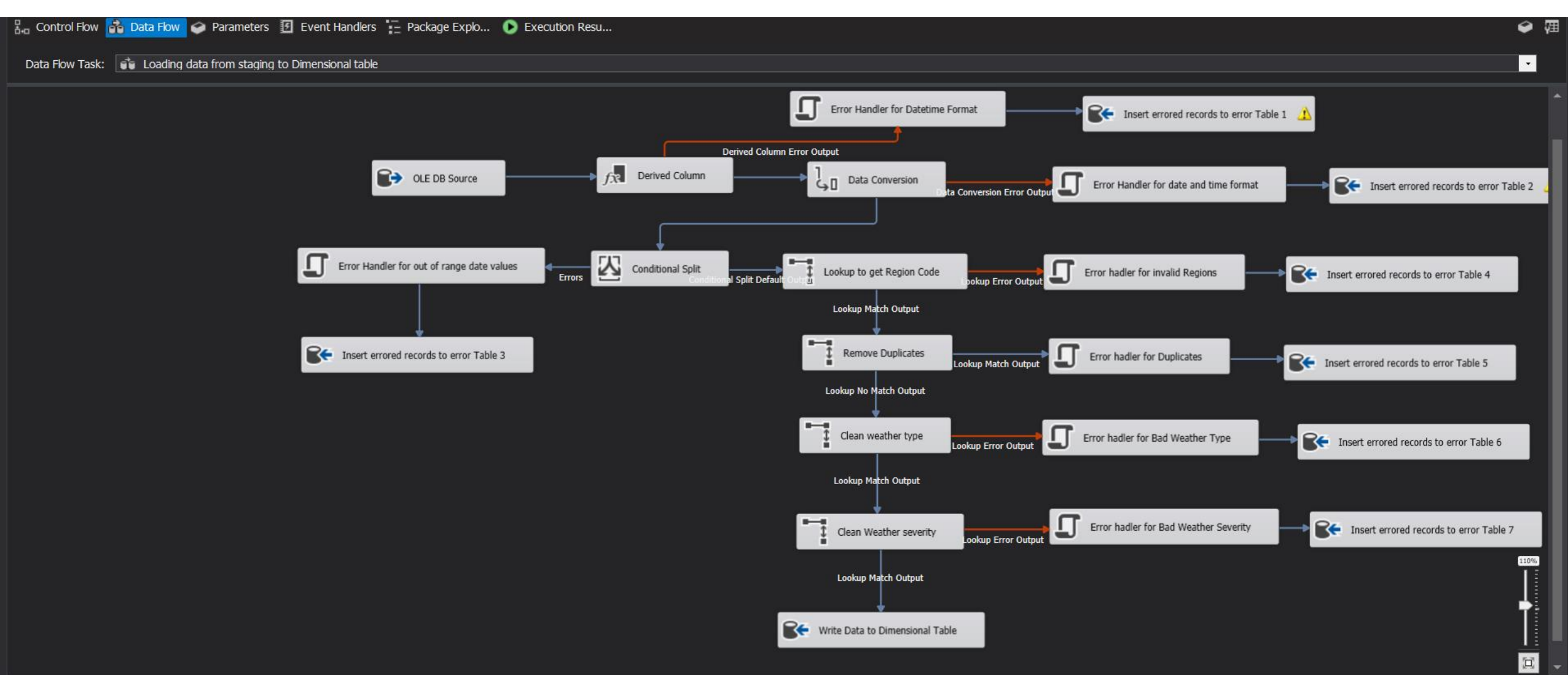
- **Accidents Data Source:** The accidents data consists of traffic accident events in the US from 2019 to June 2020. It consists of attributes like start time, end time, the type of accident, the severity of the accident and some information about the location such a city, state, county, zip code, etc.
- **Weather Data Source :** Similar to the accidents data, the weather data contains information about weather events in the USA from 2019 to June 2020 about the type, severity, the timestamp and location information, not unlike the Accidents data.
- **COVID-19 Data Source:** In this dataset we have the COVID-19 case details of each county in the US from Jan 2020 to till date. This dataset has details about number of cases, cumulative case per thousand and million, health index, economic support index, how many hospitalized, how many deaths, restriction on gathering, schools closed and many.

HIGH LEVEL DESIGN



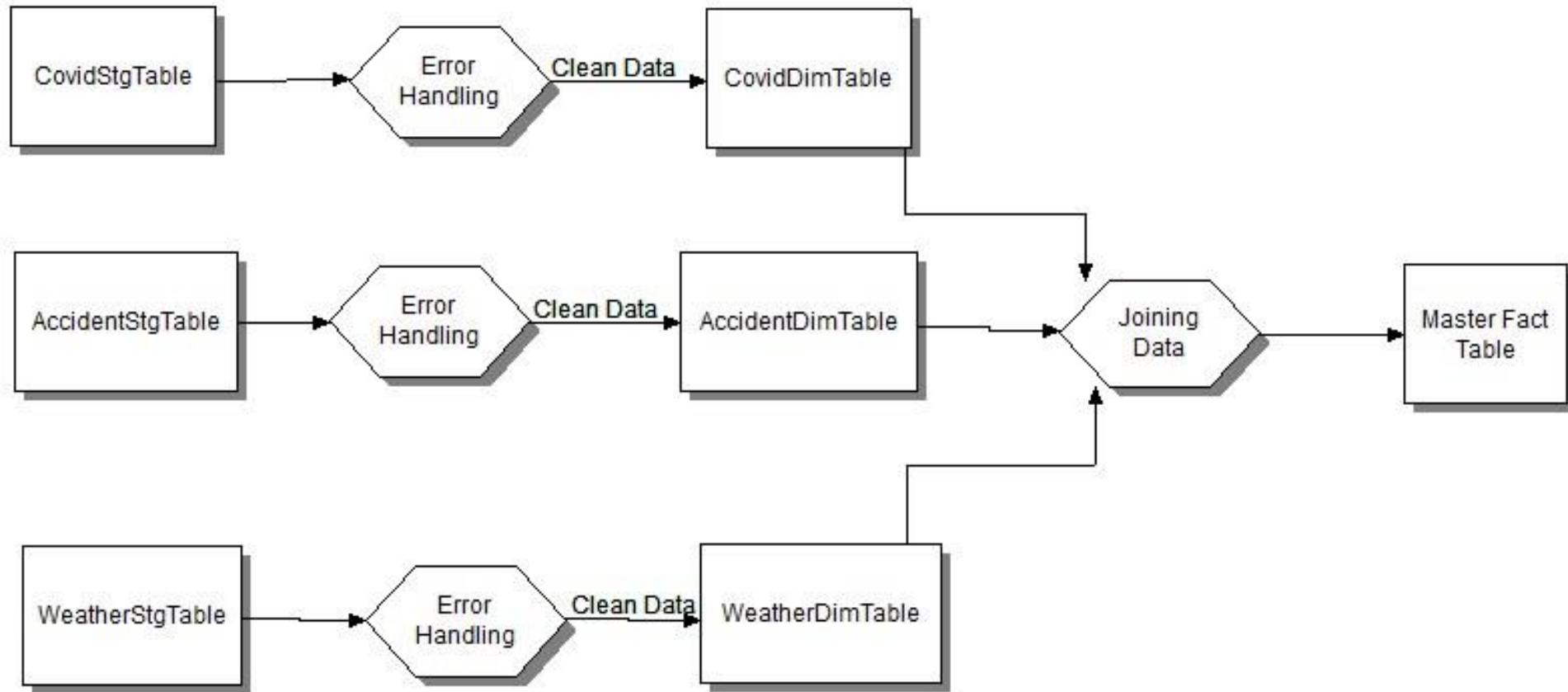
DIMENSIONAL MODEL



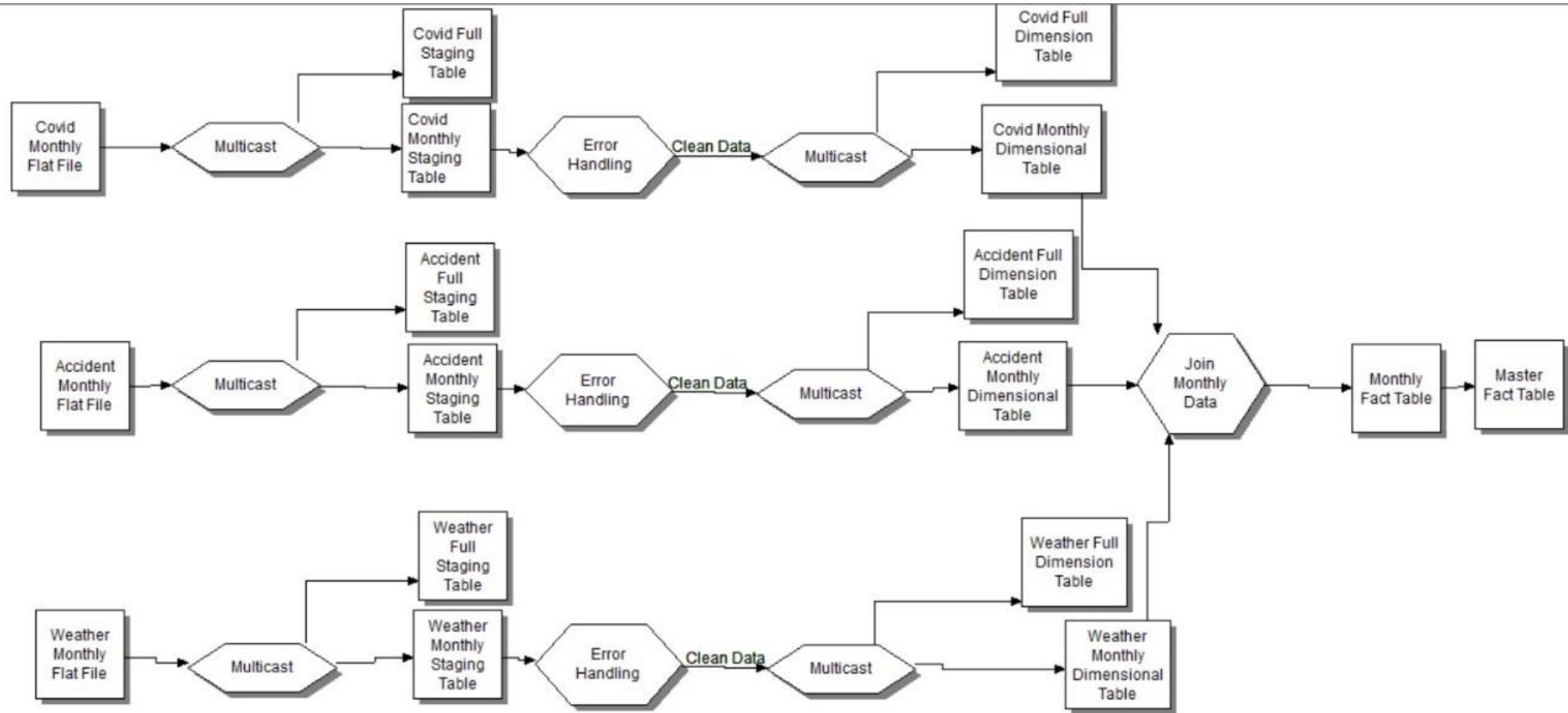


ERROR HANDLING (ACCIDENTS / WEATHER)





POPULATING FACT TABLE (INITIAL LOAD)



POPULATING FACT
TABLE(MONTHLY LOADS)

DATA MARTS

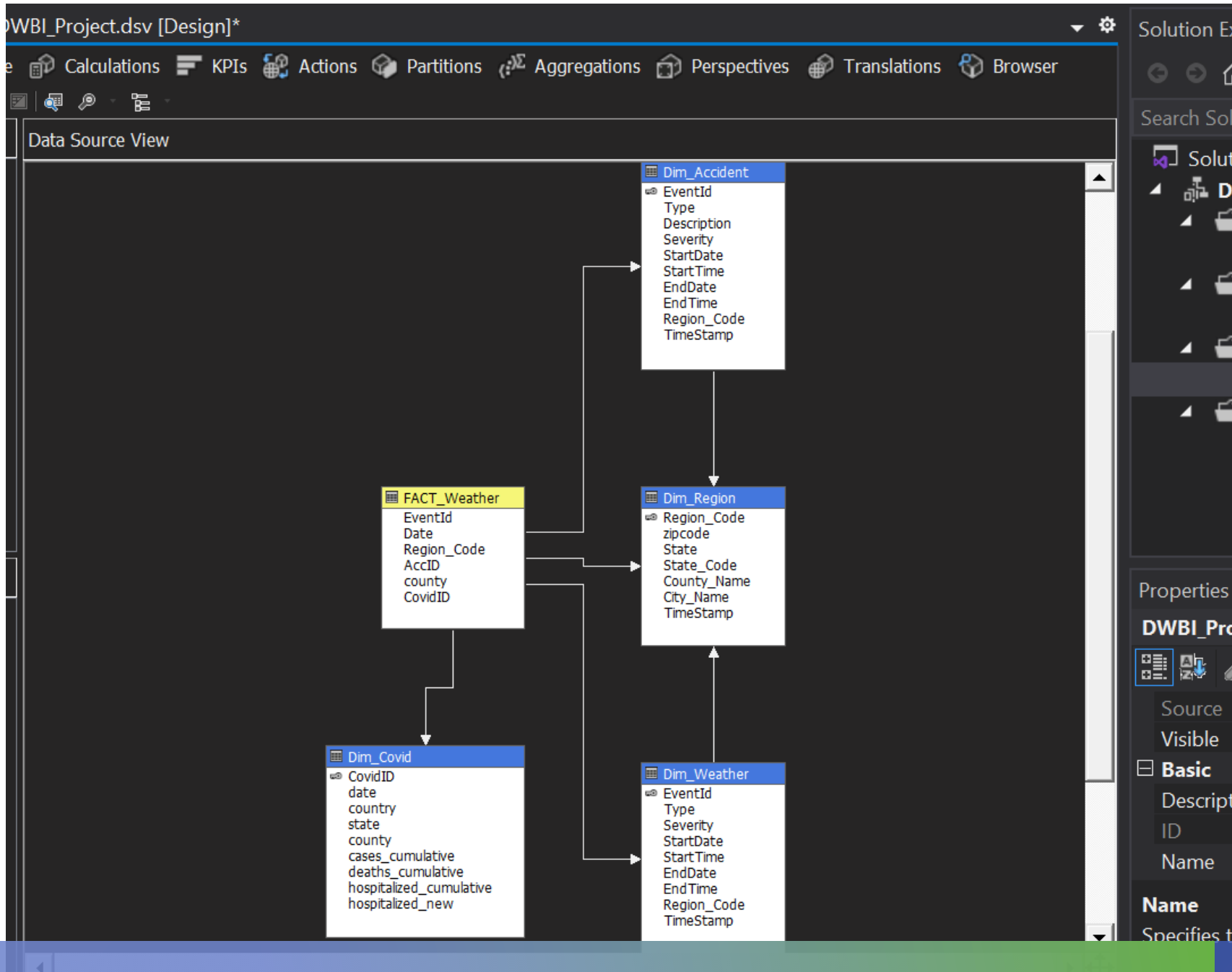
Pre Covid Mart

- With this mart, we can create further views by joining the RegionDim Table and performing aggregations by geographic regions, all of which were done further in Tableau.

Post Covid Mart

- With the post Covid data, we can join the dimensional table, Weather and Accident, and use the Region tables to derive data and answer more specific questions.

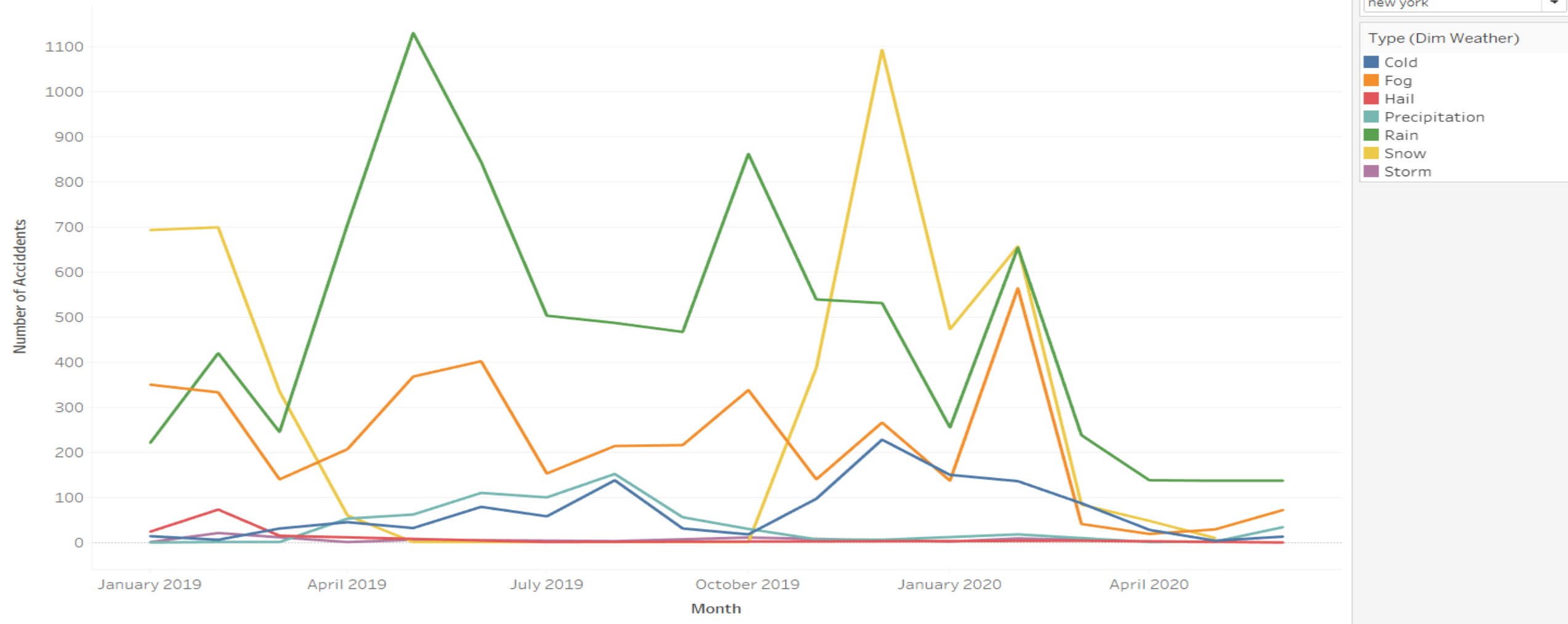
Users have freedom to manipulate the data through joins with the dimensional tables to answer any questions they have.



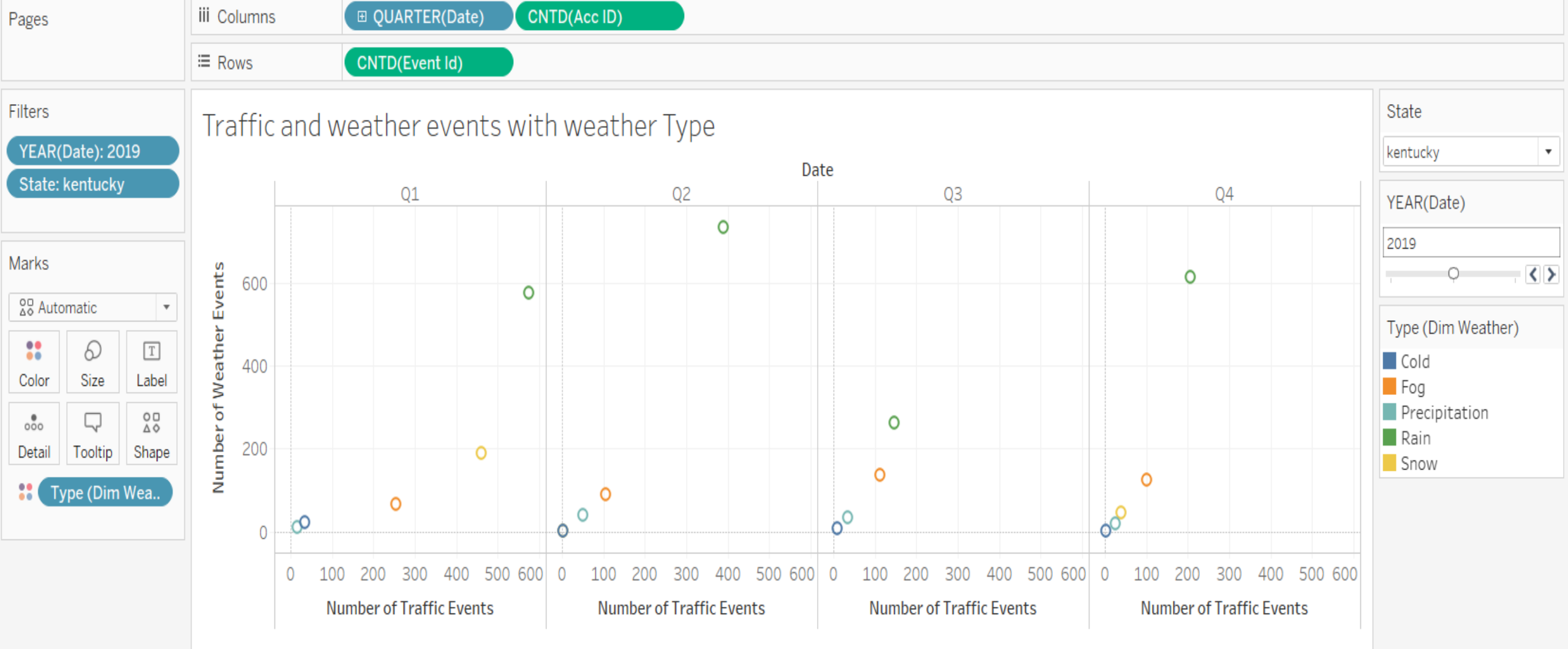
OLAP CUBE

- Allows us to slice and dice cube data all by various dimensions, measures and filters.
- Gives idea on how many accidents on which day which region etc.

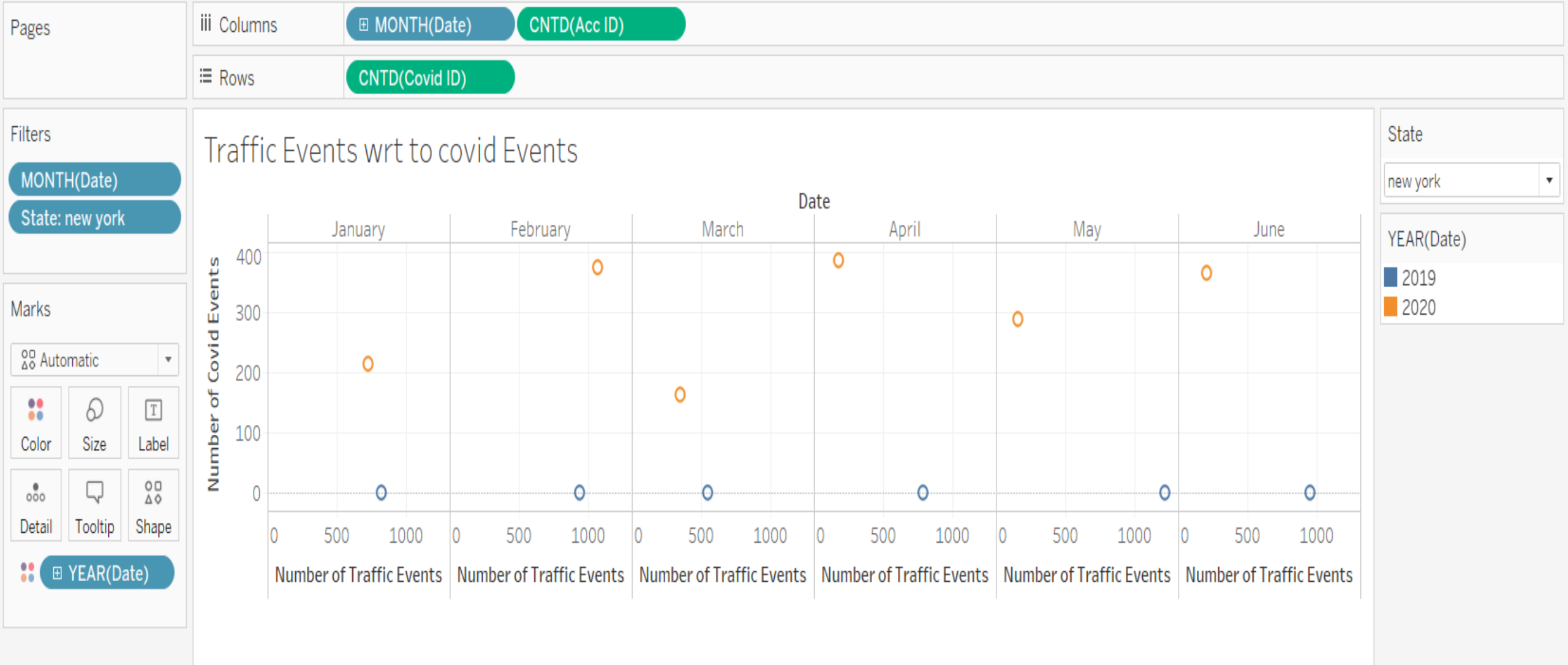
Traffic Event with Weather Type



RELATIONSHIP BETWEEN TRAFFIC
INCIDENTS AND WEATHER EVENTS



RELATIONSHIP BETWEEN TRAFFIC INCIDENTS AND WEATHER EVENTS



RELATIONSHIP BETWEEN TRAFFIC INCIDENTS AND COVID-19 CASES