Presentation: Aviation Data Analysis

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Understanding Aviation Accidents: A Data-Driven Approach

UNCOVERING INSIGHTS TO IMPROVE SAFETY….

Agenda

- Introduction to Aviation Data Analysis
- Data Cleaning and preparation
- Explorative Data Analysis (EDA)
- Key findings and Insights
- Recommendations and improvements

Introduction to Aviation Data Analysis

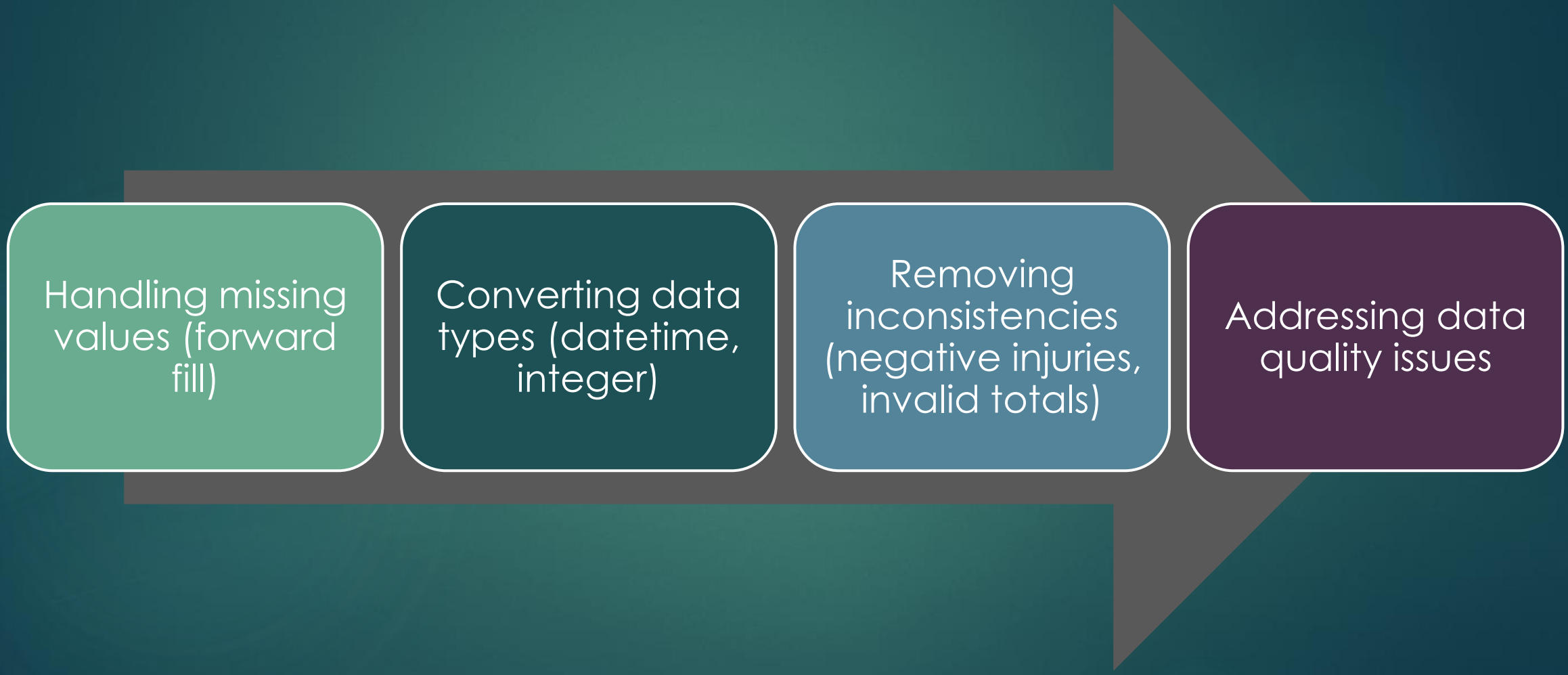
Why Data Analysis?

- Identify trends and patterns in aviation accidents
- Understand factors contributing to accidents
- Inform decision-making for safety improvements

Data Cleaning and Preparation

- **Data Source:** AviationData.csv

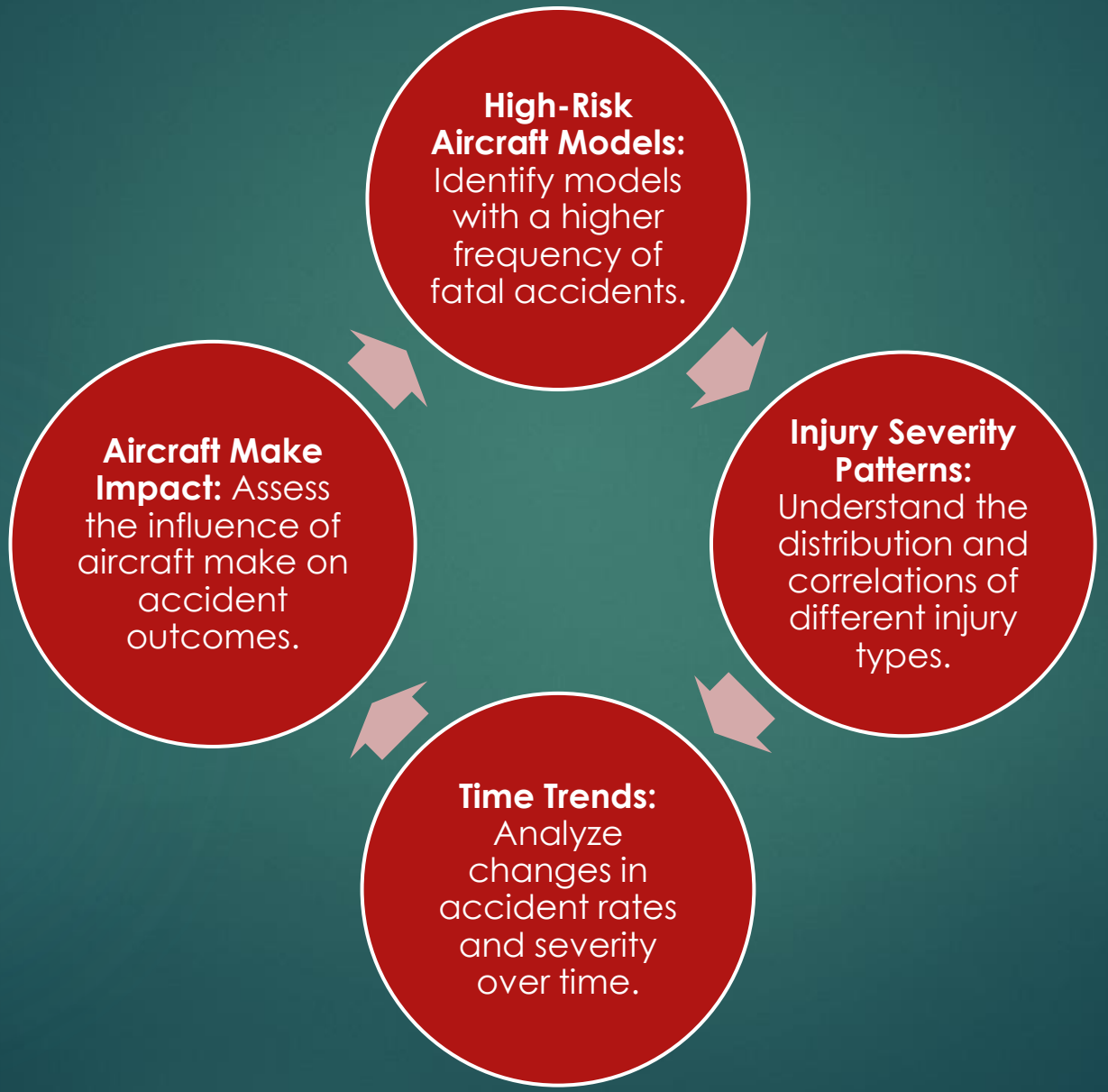
Data Cleaning Steps:



Exploratory Data Analysis (EDA)

Visualizing Trends:	• Line plot: Total fatal injuries over time • Scatter plot: Relationship between year and total fatal injuries
Analyzing Injury Severity:	• Descriptive statistics: Summary of injury types • Histogram: Distribution of total fatal injuries
Box plot:	• Fatal injuries by aircraft make
Investigating Correlations:	• Correlation matrix: Relationships between injury types

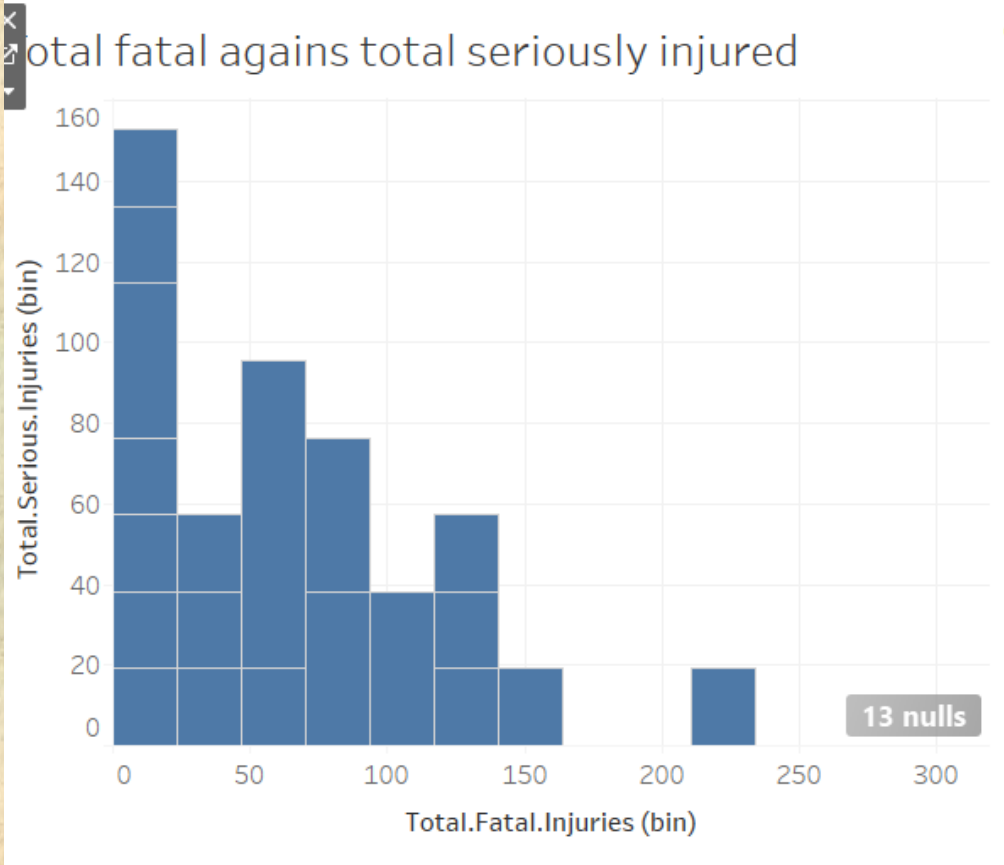
Key Findings and Insights

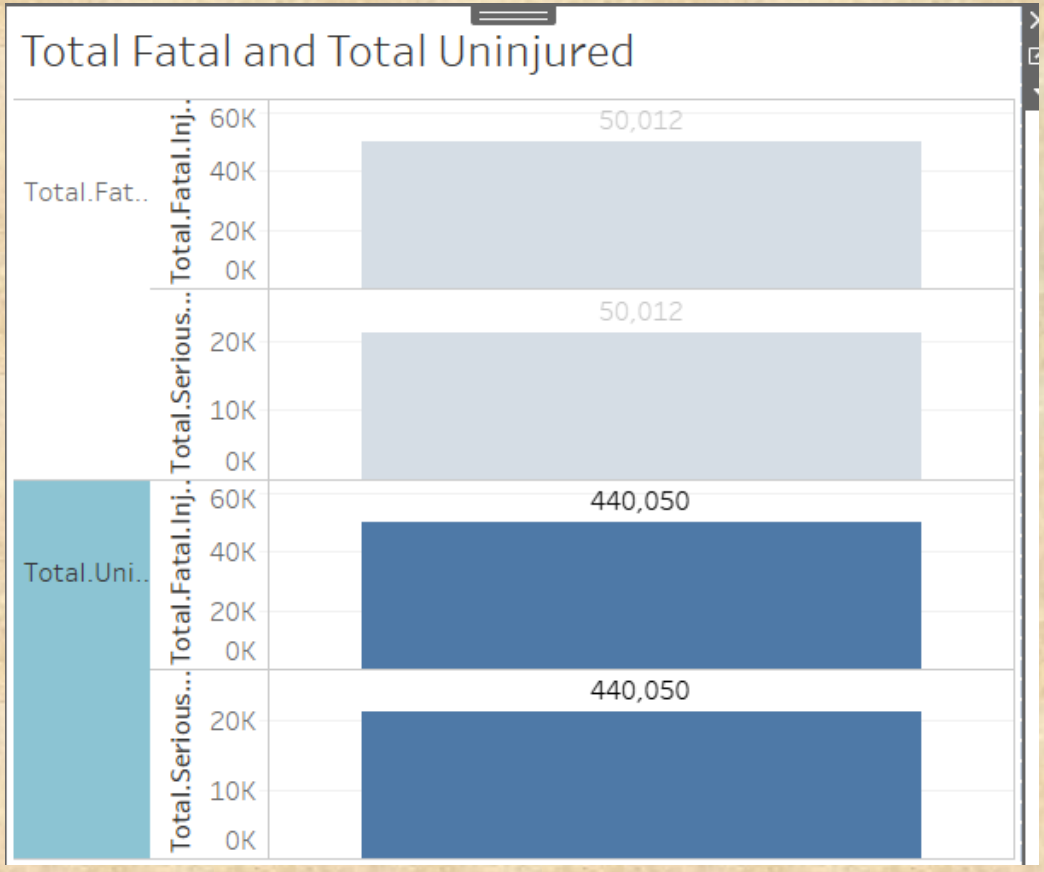


Recommendations for Improvement

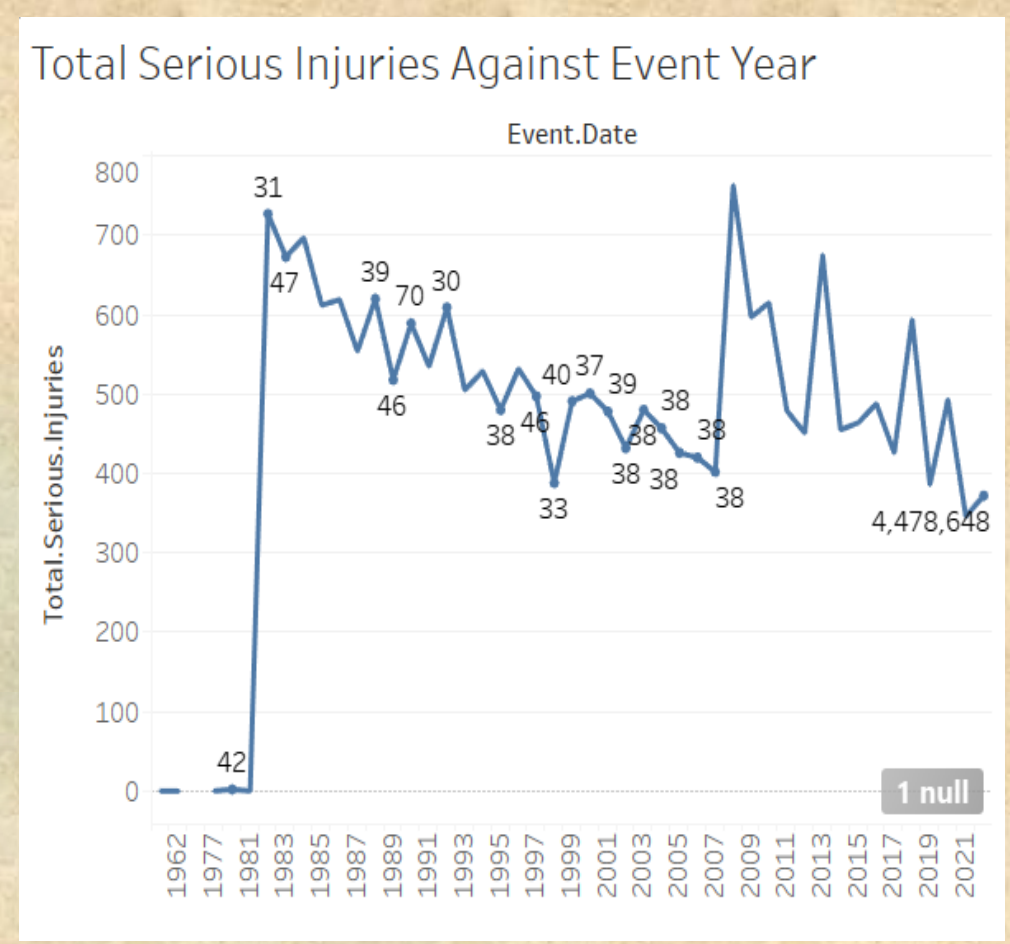
- **Targeted Safety Initiatives:** Focus on high-risk aircraft models and injury types.
- **Data Quality Enhancement:** Improve data collection and cleaning processes.
- **Advanced Analytics:** Utilize machine learning techniques to predict accident risks.
- **Continuous Monitoring:** Implement regular data analysis and reporting.

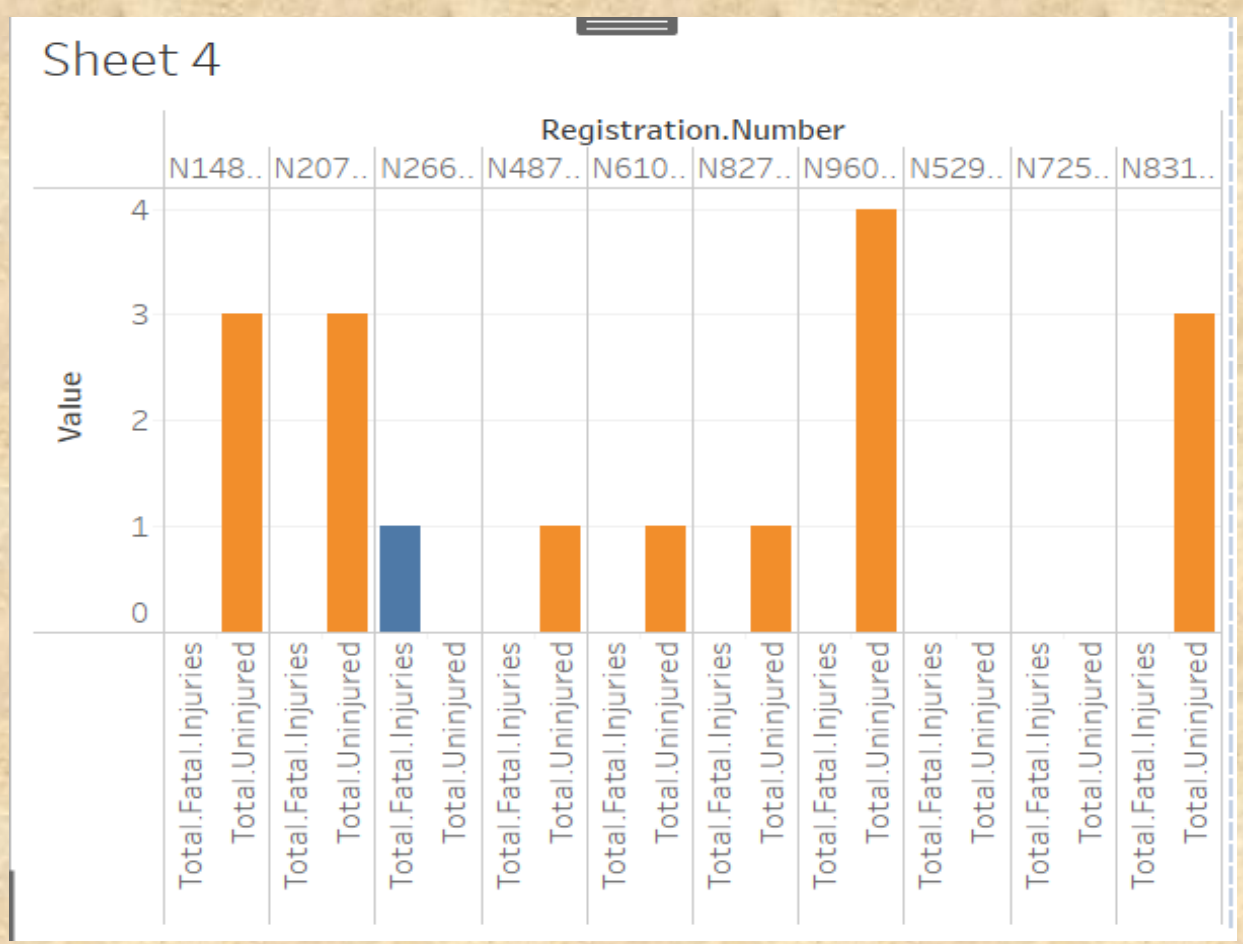
Analytics…


otal fatal agains total seriously injured
160
140
120
100
80
60
40
20
0
Total.Serious.Injuries (bin)
0
50
100
150
200
250
300
Total.Fatal.Injuries (bin)
13 nulls


Total Fatal and Total Uninjured
Total.Fat..
Total.Fatal.Inj..
60K
40K
20K
0K
50,012
Total.Serious...
20K
10K
0K
50,012
Total.Uni..
Total.Fatal.Inj..
60K
40K
20K
0K
440,050
Total.Serious...
20K
10K
0K
440,050

Analytics Continued…





Comparing Distribution of Injury Severity