



Analyzing Climate's Role in Urban Accidents in the U.S.

MVP 2: Intermediate Progress Presentation



Recap of Objectives and Scope

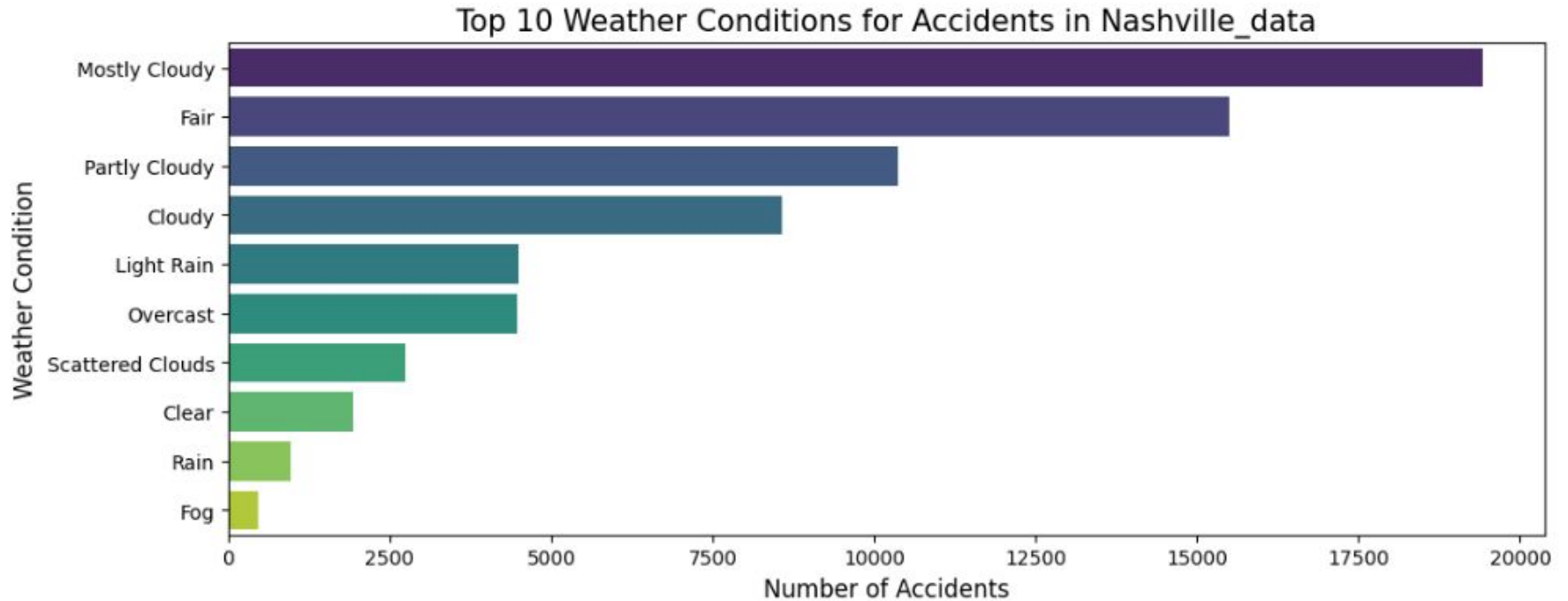
Objective: Understanding Weather-Accident Relationships

Focus: Seasonal Trends, Pattern Recognition, Forecasting

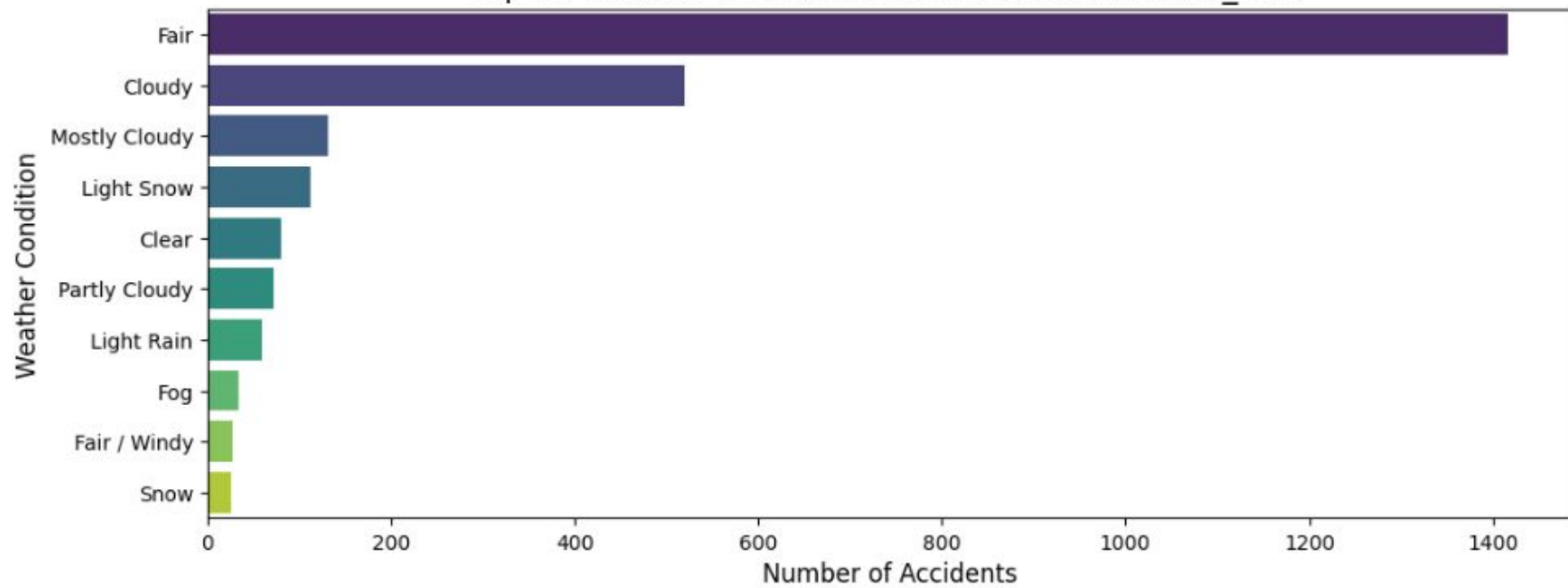
Approach: Time-Series Analysis

Cities: Madison, Wisconsin; Boise, Idaho; Nashville, Tennessee.

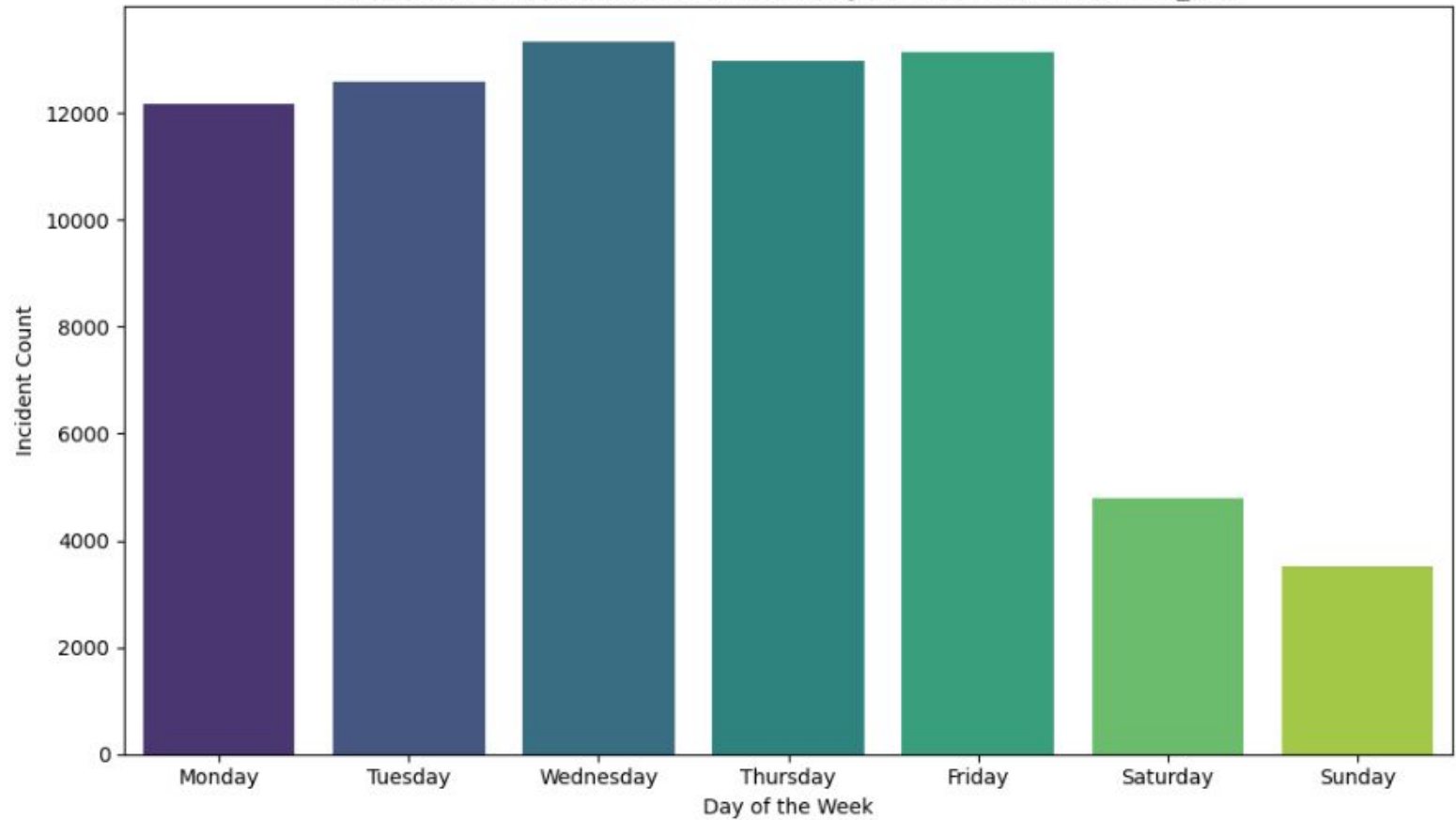
Accident Frequency Analysis



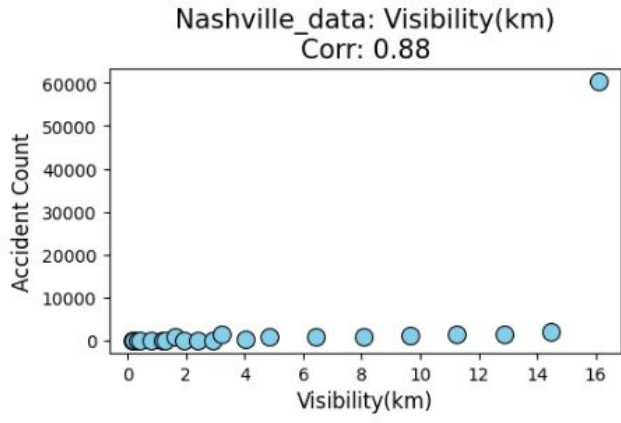
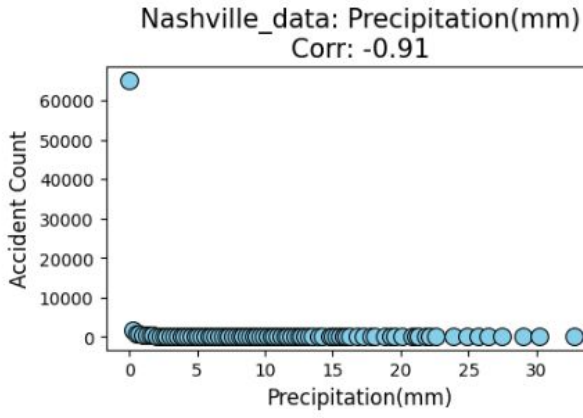
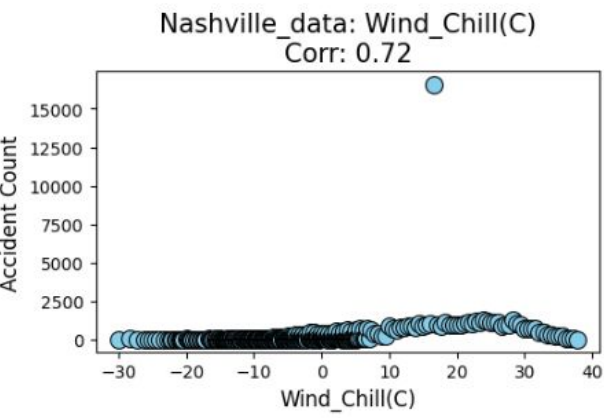
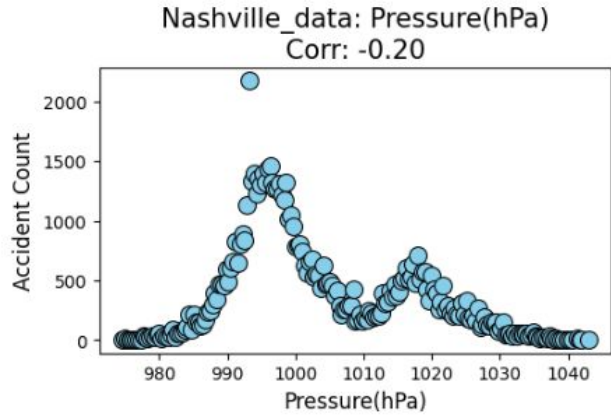
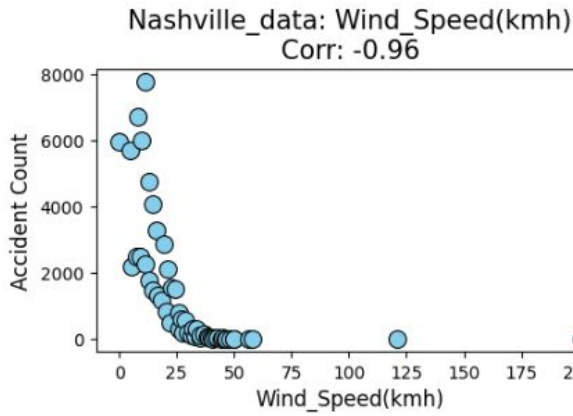
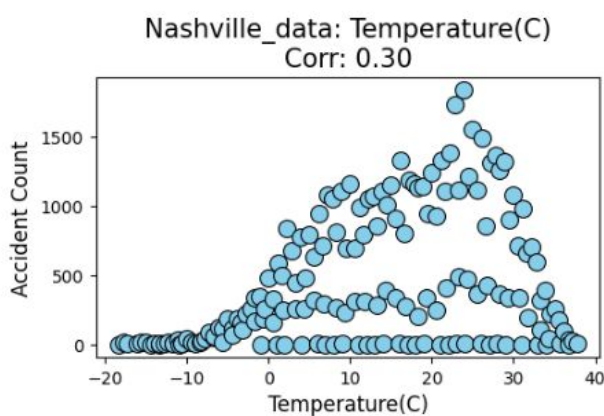
Top 10 Weather Conditions for Accidents in Boise_data



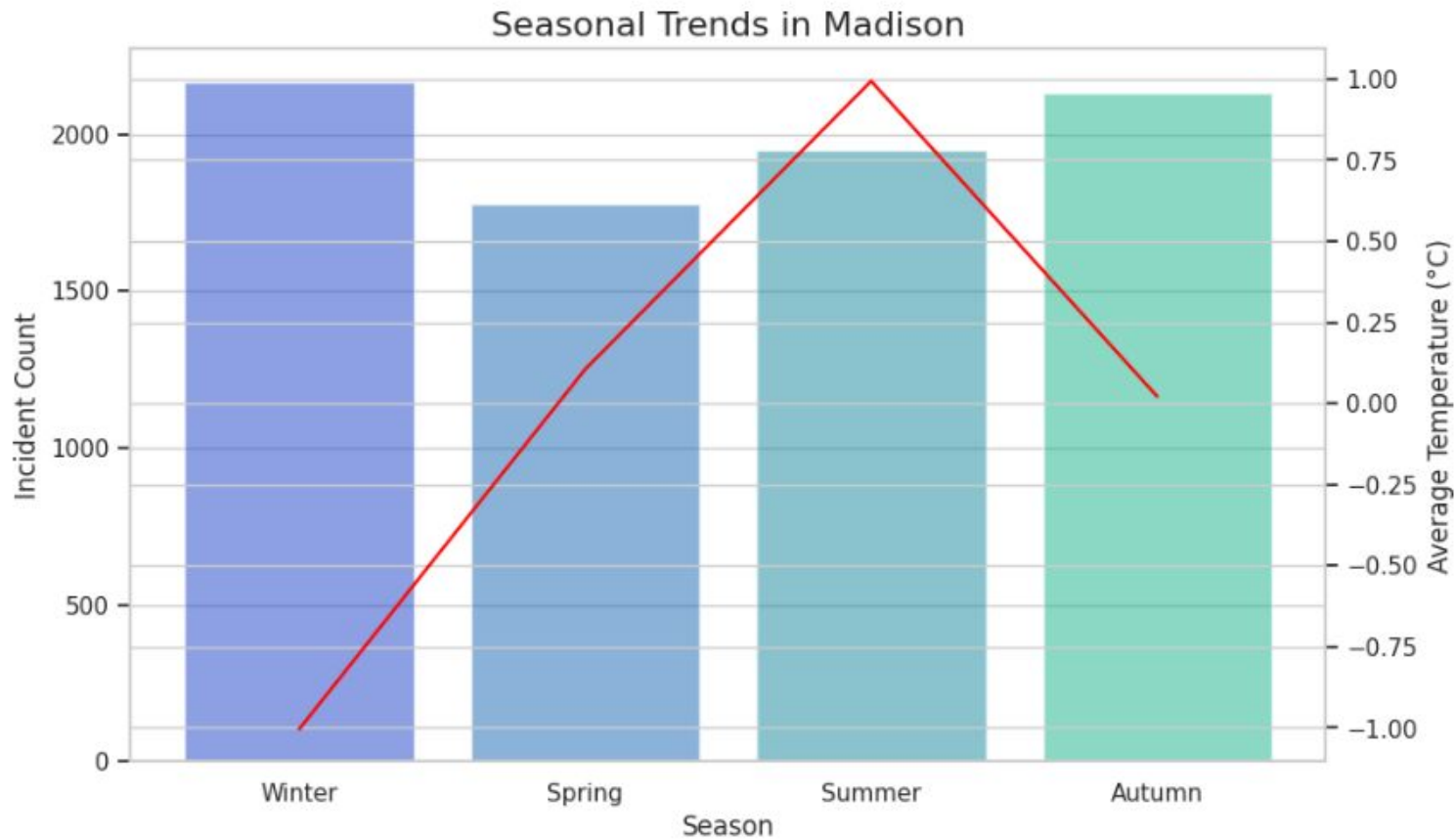
Distribution of Incidents over Different Days of the Week in nashville_data



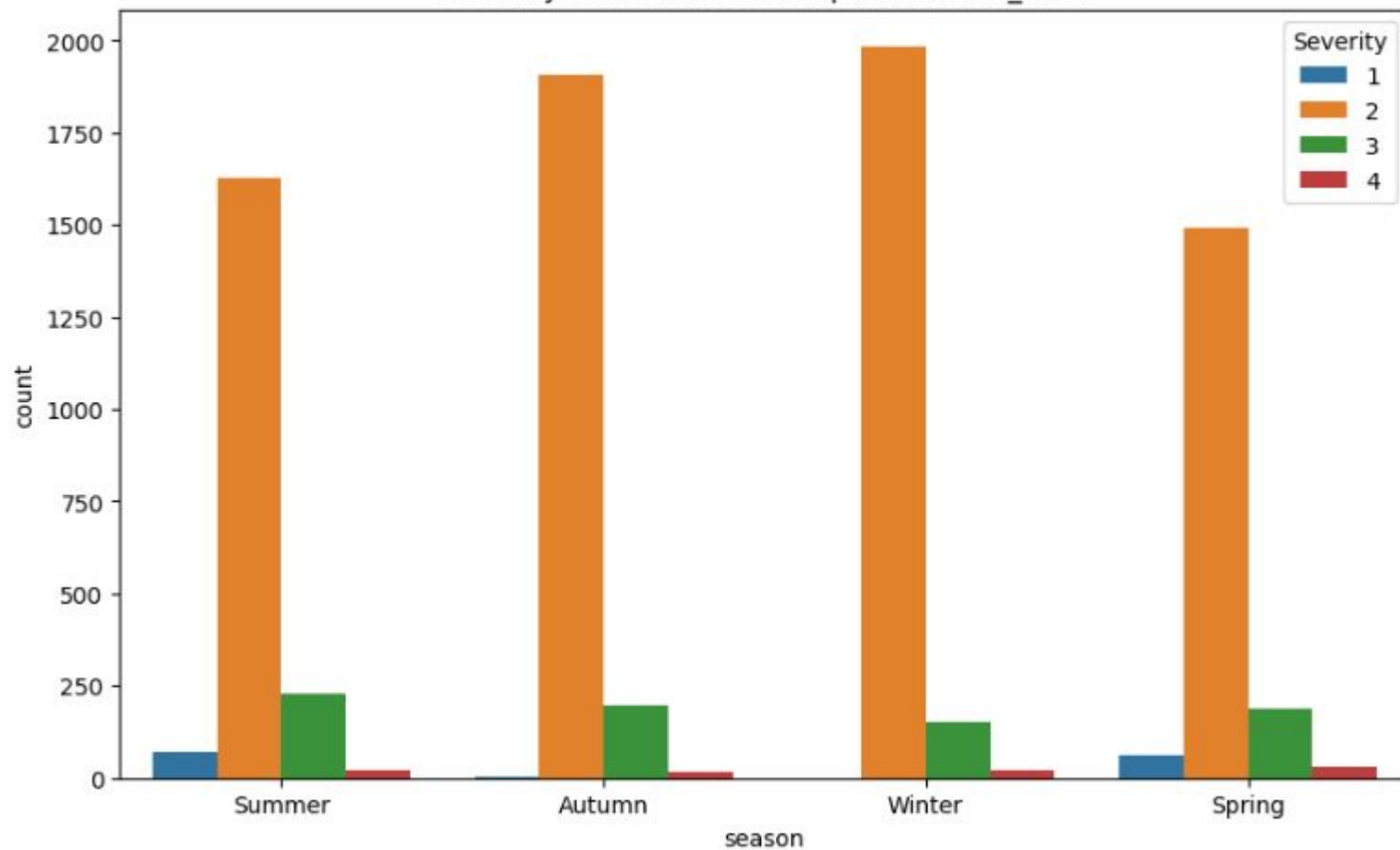
Correlation Analysis



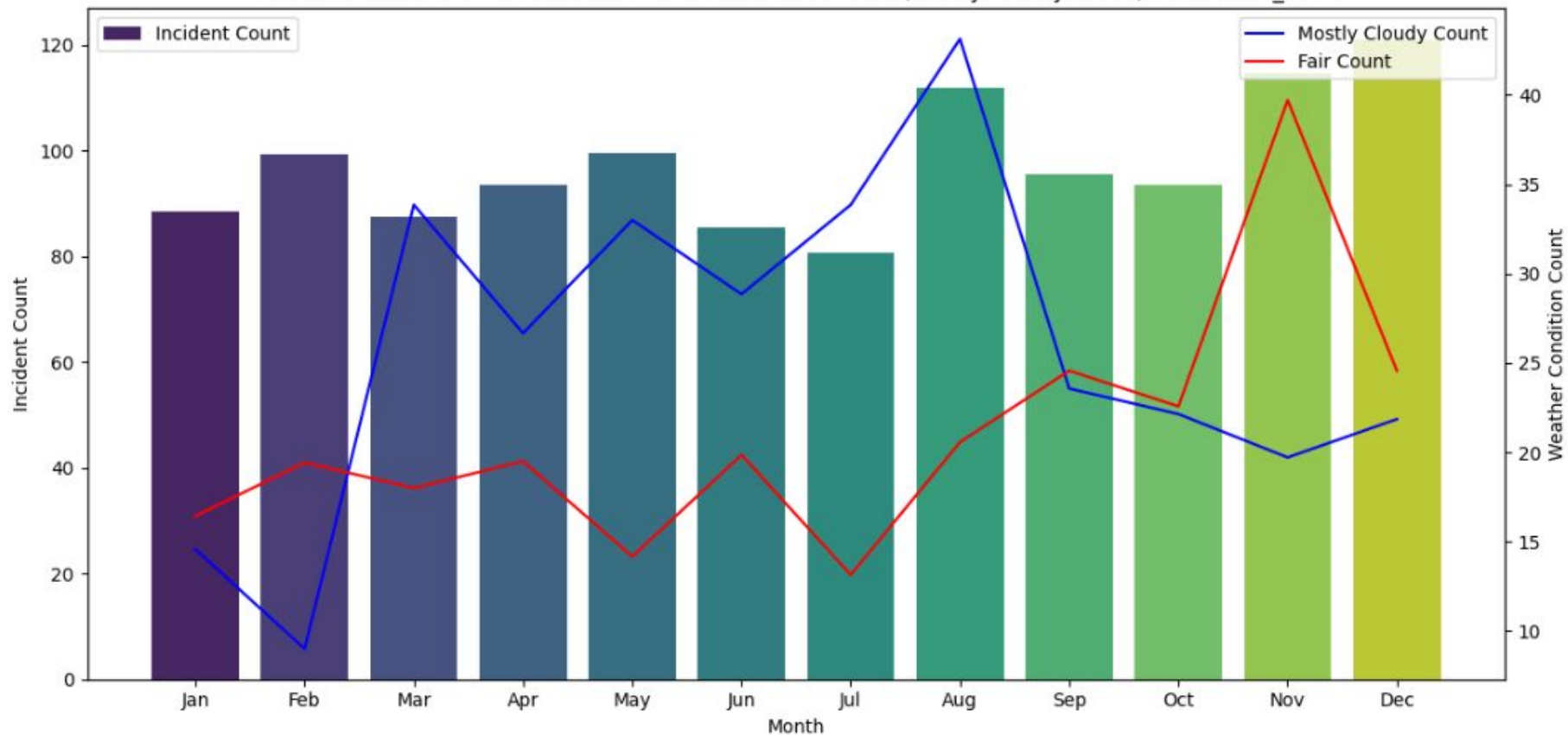
Seasonal Trends



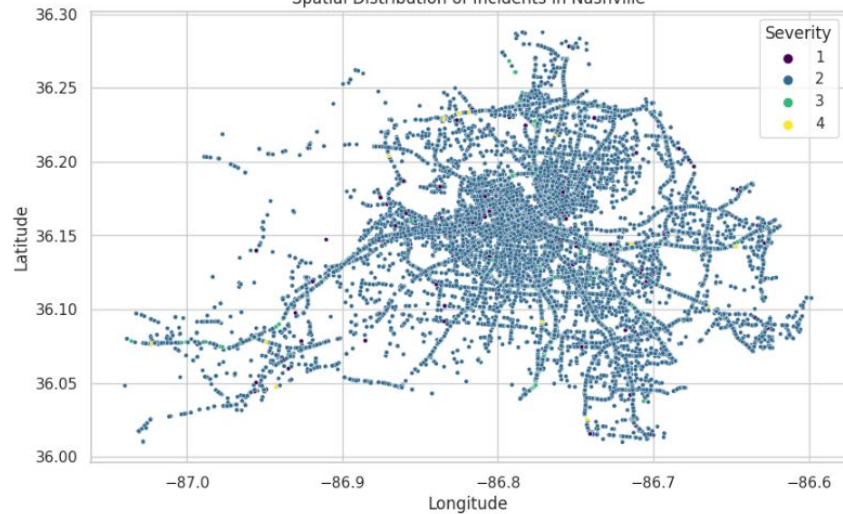
Severity-Season Relationship in madison_data



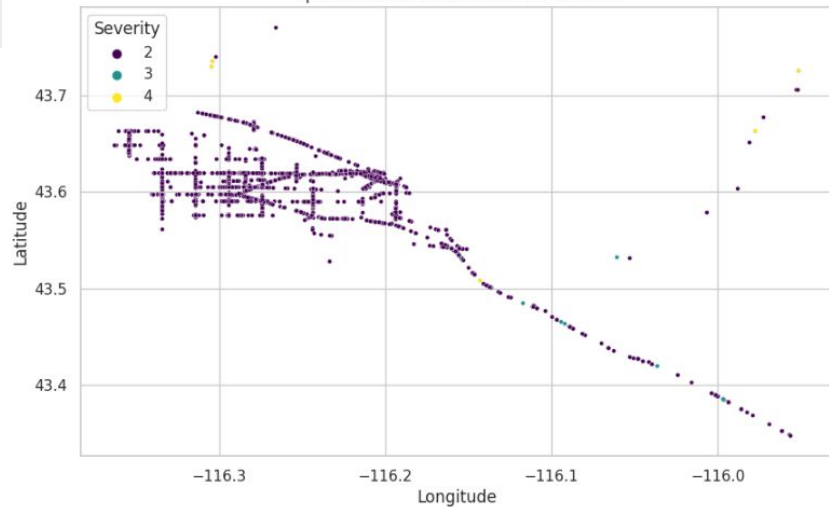
Seasonal Trends: Incident Counts and Weather Conditions (Mostly Cloudy & Fair) in madison_data



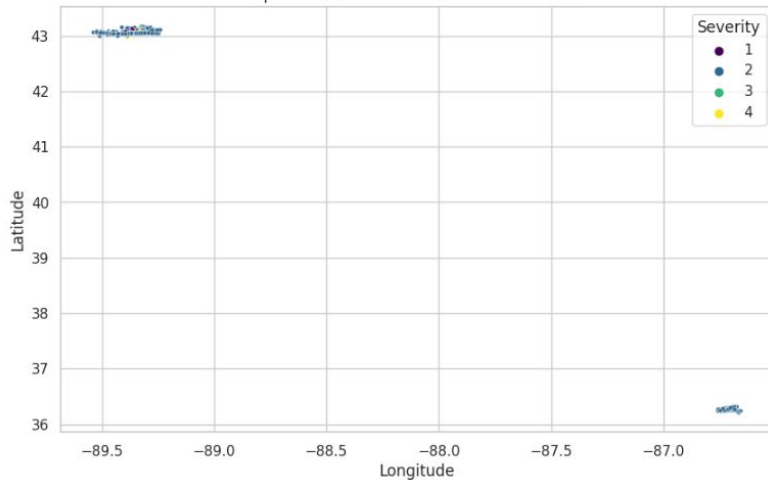
Spatial Distribution of Incidents in Nashville



Spatial Distribution of Incidents in Boise



Spatial Distribution of Incidents in Madison



Graph quirk alert!

Summary



- The project reveals a paradox where most accidents occur in clear or fair weather conditions, potentially due to higher traffic volumes.
- Various weather conditions like temperature, visibility, and specific weather patterns have different impacts on accident frequencies in different cities.
- The frequency of accidents varies significantly across different months and weather conditions.

Next Steps



- Perform statistical tests to see if the observed trends are statistically significant.
- Forecasting models and evaluations focused on Nashville, due to more data points and variation.
- ARIMA/SARIMA models to forecast "Total Accidents" and "Average Severity" based on the observed patterns and trends.



Questions & Feedback



Presented by Sergio David

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