Prediction of severity of vehicular accidents

By Abraham Vergara

Severity of Car accidents

- The automobile is one of the most common methods of transportation worlwide.

- It is important then to look for methods and prevention strategies to be able to reduce the amount of accidents

- Severity ranges from: slight(minimum car damage), serious (injuries) to fatal (lost of lives)

Purpose of work

- See relationship between environmental factors and how severe an accident might be.

- Help prevent accidents. (Individuals)

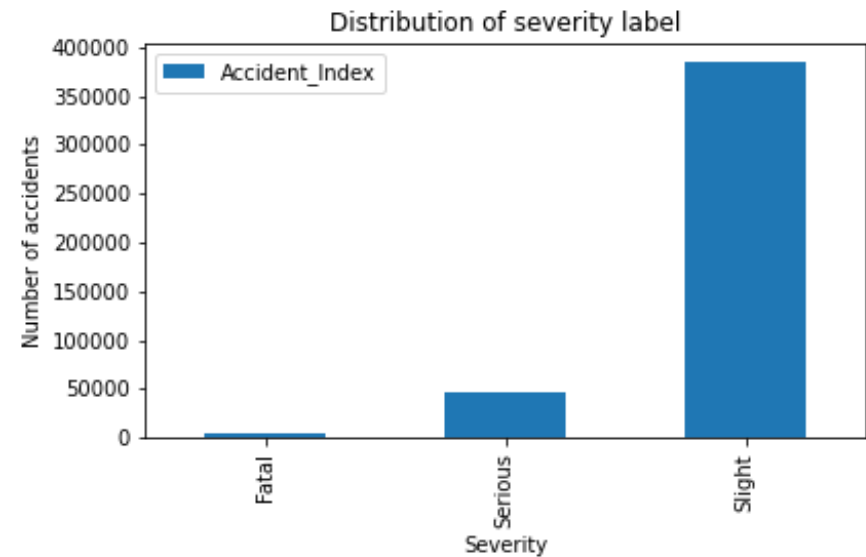- Reduce costs. (Insurance companies, government)

Dataset

- It is under OGL license (Open Government License)

- 10 years of data from United Kingdom

- Available in Kaggle.

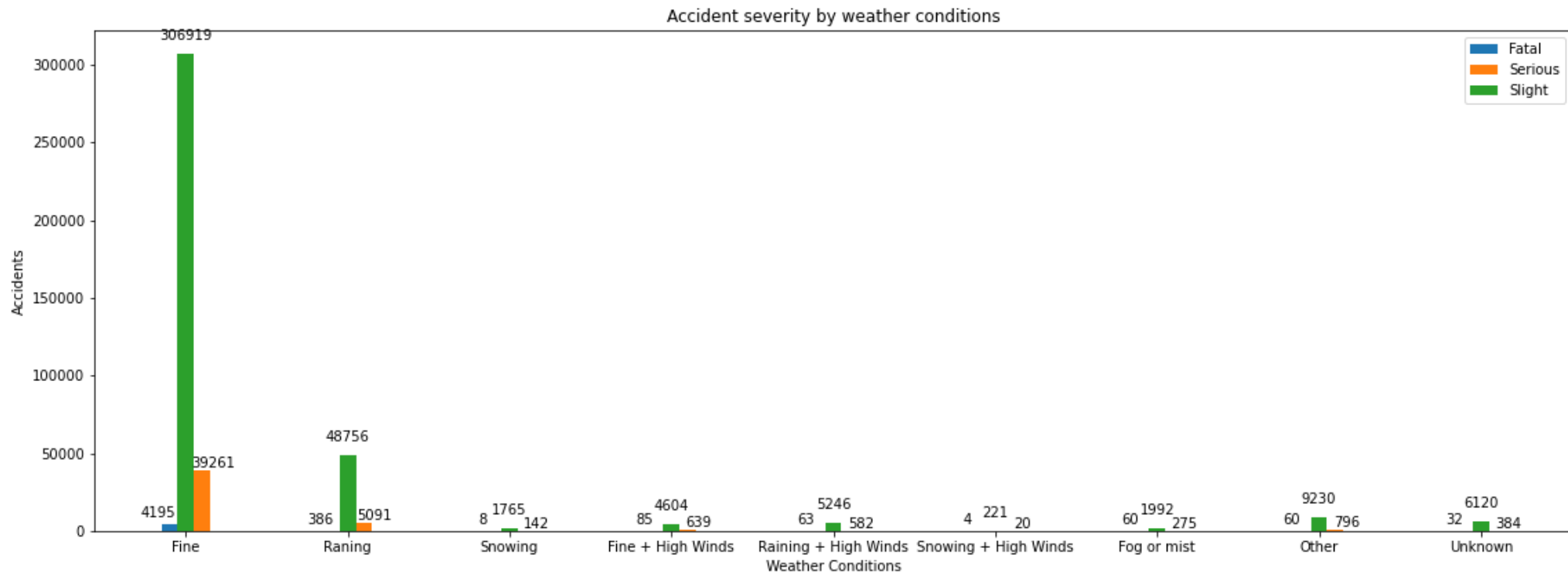- https://www.kaggle.com/benoit72/uk-accidents-10-years-history-with-many-variables/notebooks

Analysis

- Initial analysis of data
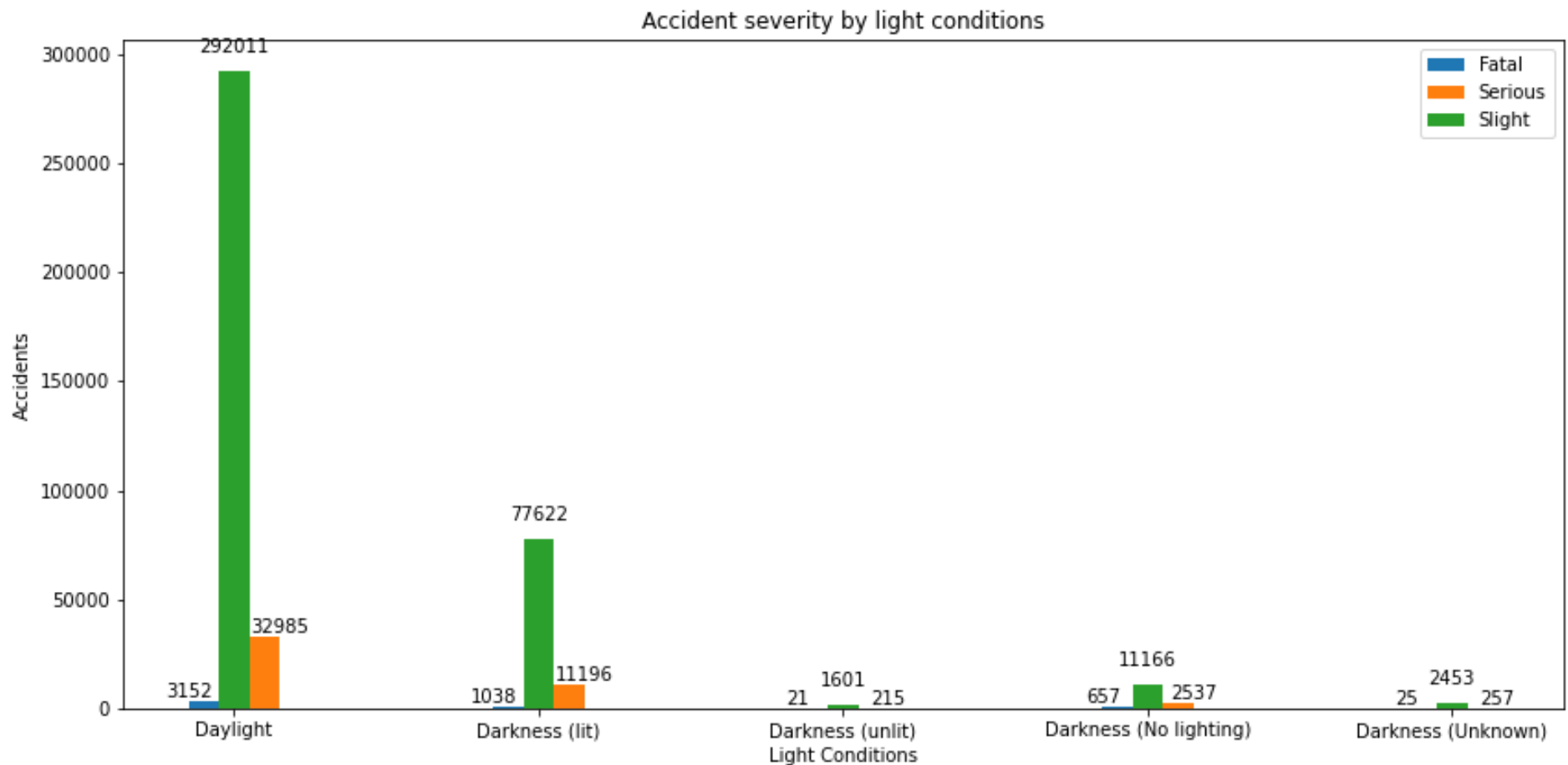
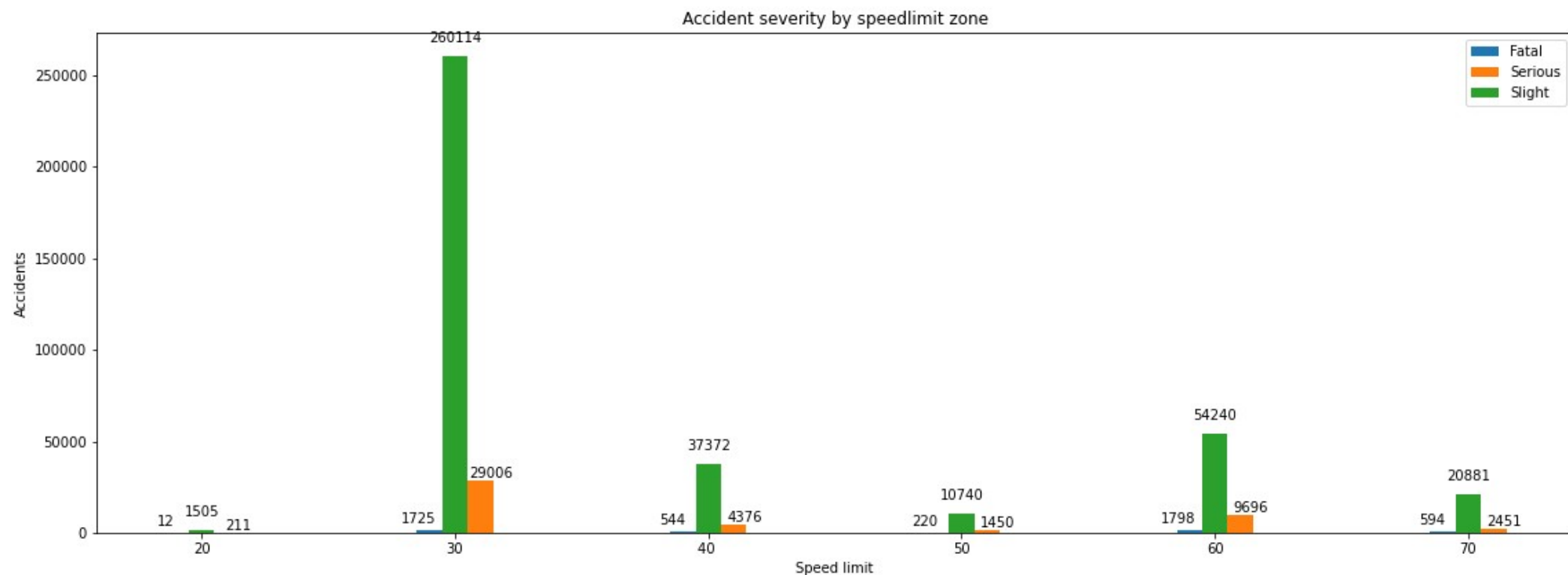- Distribution of labeled data (severity)

Environmental factors

Relation between weather and severity
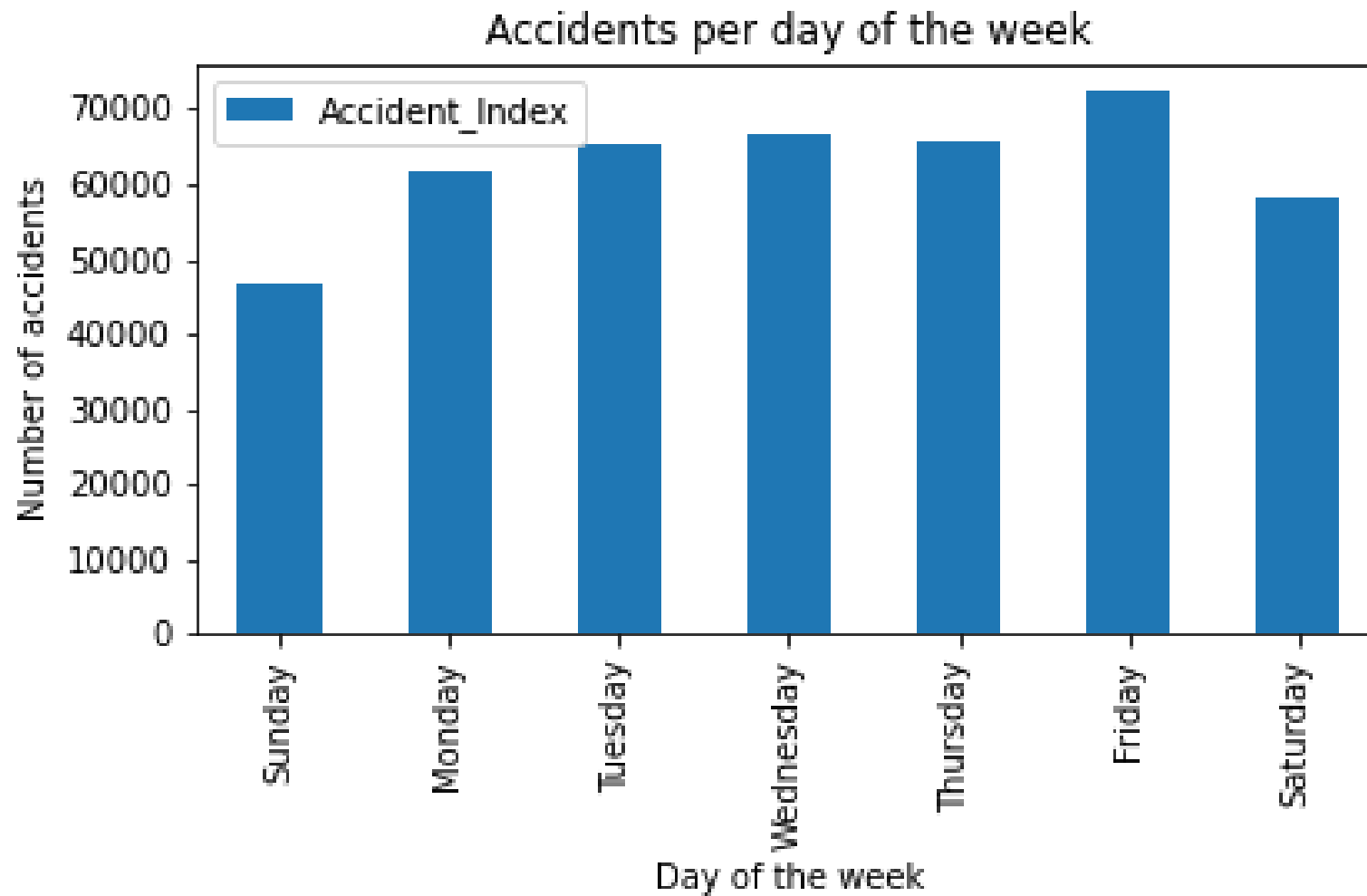
Severity vs lighting

Severity vs speed limit

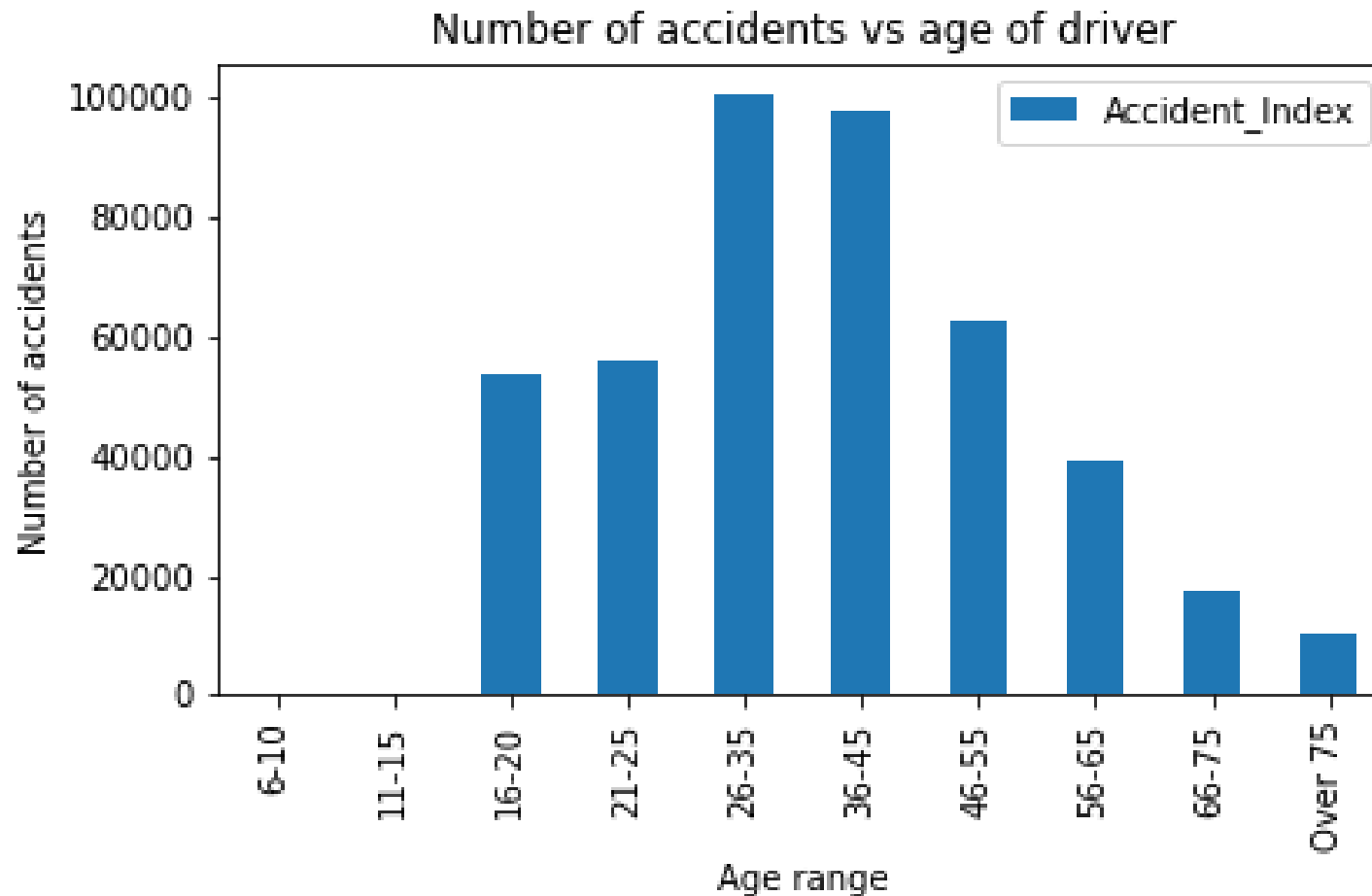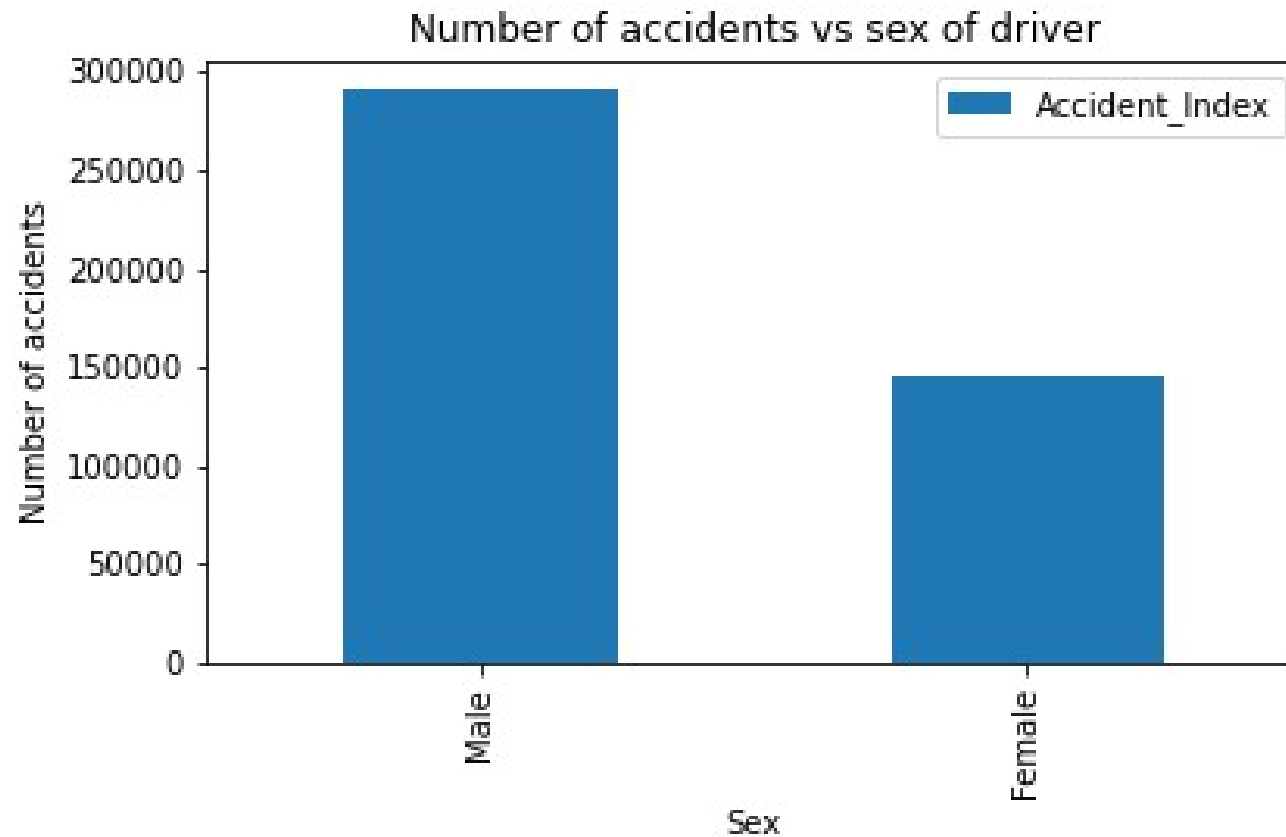Accident severity by speedlimit zone

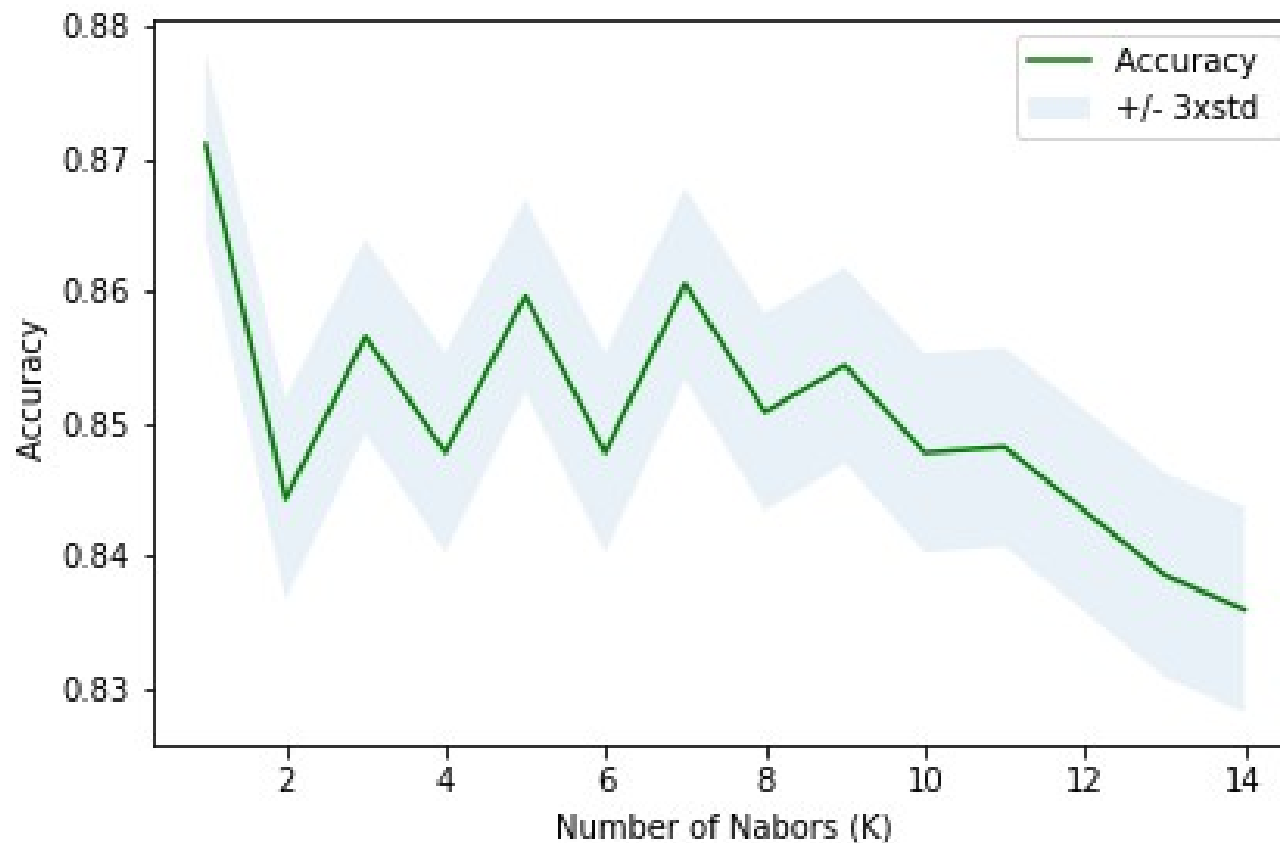# Weekday

Driver factors

Relation between age and severity

Accidents vs sex of driver

Model: k for K nearest neighbor

Results

- Most accidents occur during good weather with no external conditions to impair the driver.

- The biggest amount of accidents occur during daylight and the second most accidents occur during night time under well-lit conditions.

Conclusions

- The initial hypothesis that bad weather conditions was the main cause of vehicular accidents can be discarded and some other possibilities need to be contemplated and explored.

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- Even though the model works, I would consider the possibility of other factors having a bigger impact on the severity of an accident, requires further exploration.