



# Predicting severity of Accidents

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BY USING DATA ANALYSIS,  
DATA VISUALISATION AND  
MACHINE LEARNING

# Importance of predicting severity of accident

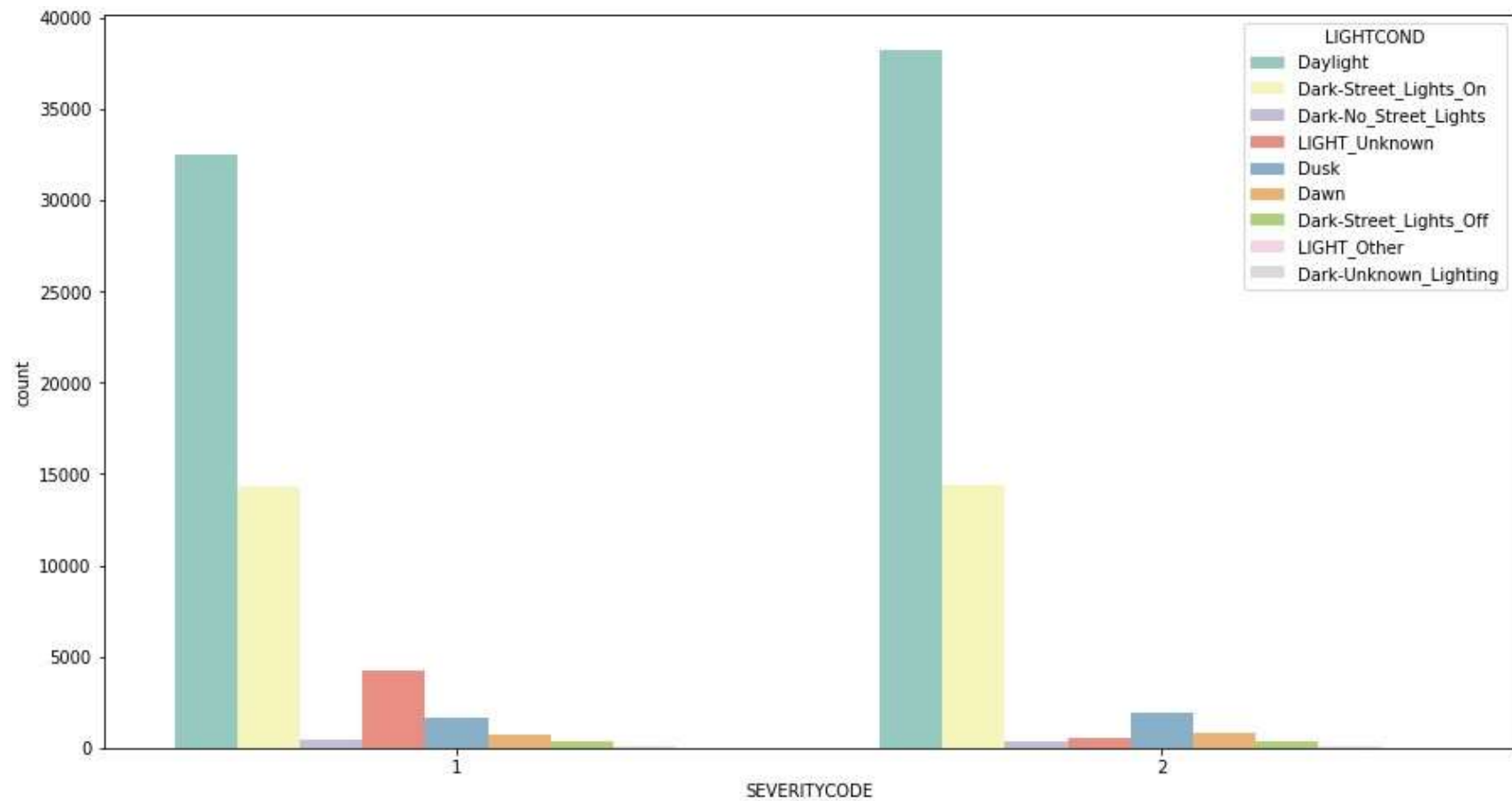
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- When Infrastructural planner and builder knows the infrastructural factors of severity of accidents, they can build safe city road infrastructure
- Situational factors of accident help people to reschedule their time of travelling to lessen the probability of encountering the sever accidents.
- Similarly, by knowing the environmental factors of accidents like rain and lighting conditions, traveller can plan better.

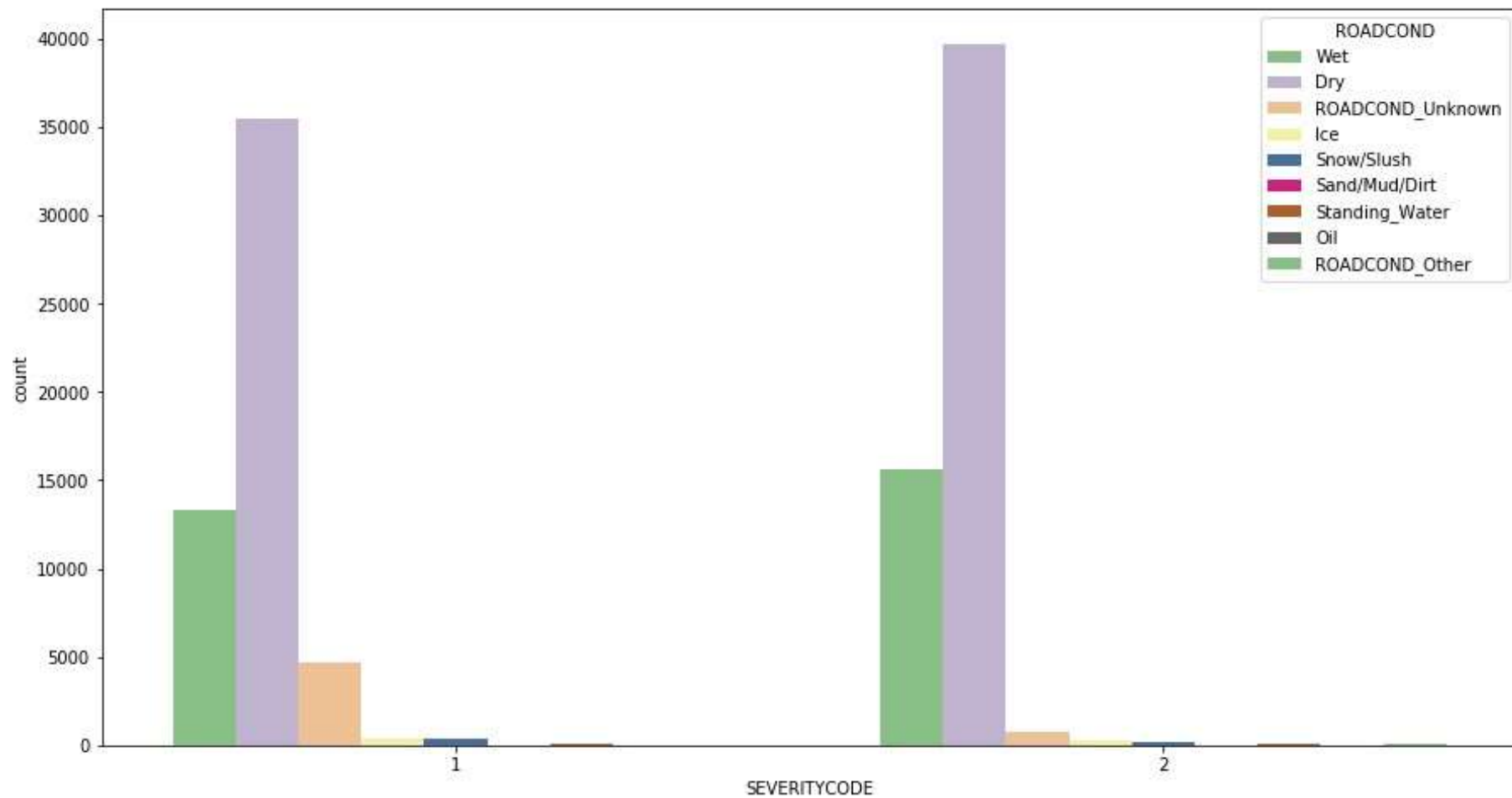
# Data acquisition and cleaning

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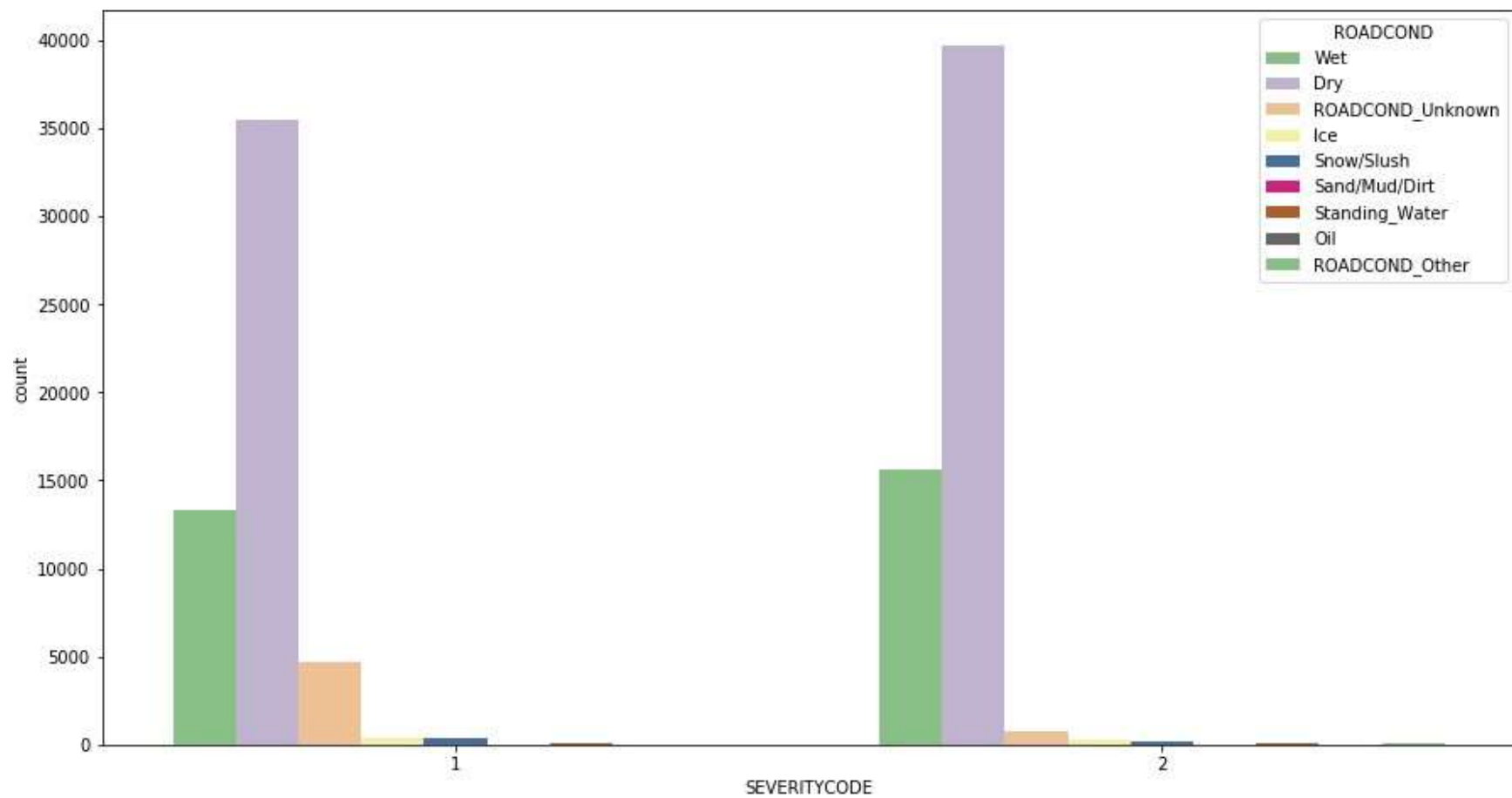
- Accident data is downloaded from the coursera source.
- The data set have 194673 rows and 38 columns.
- Duplicate, highly similar or highly correlated features were dropped.
- Day of week and the hour of accident is extracted from the datetime of the accident
- Severity have two values-1 and 2 and they are imbalanced. Therefore, some rows are randomly dropped to make data balanced.



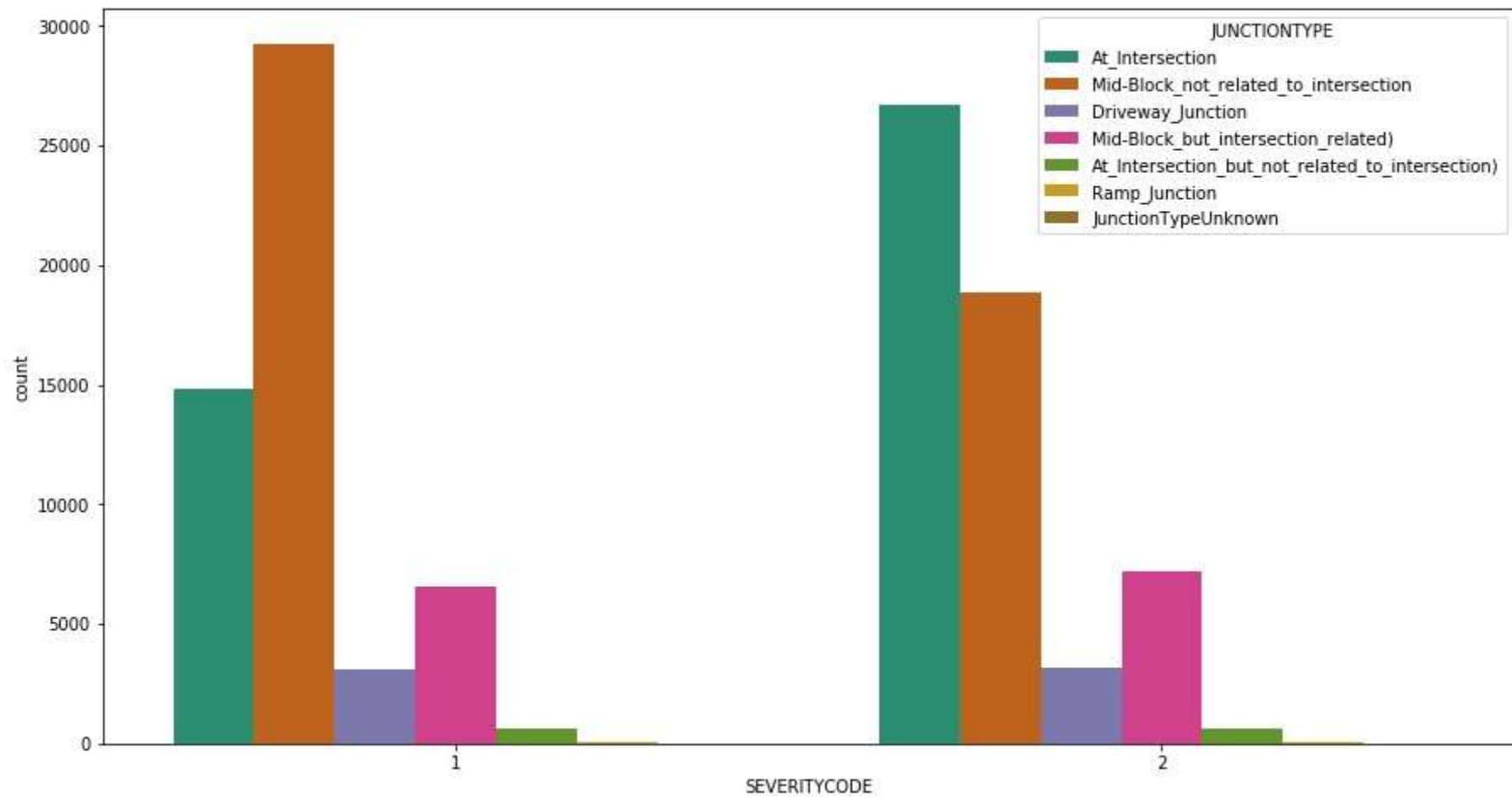
**Relationship between Lighting condition and severity of accident**



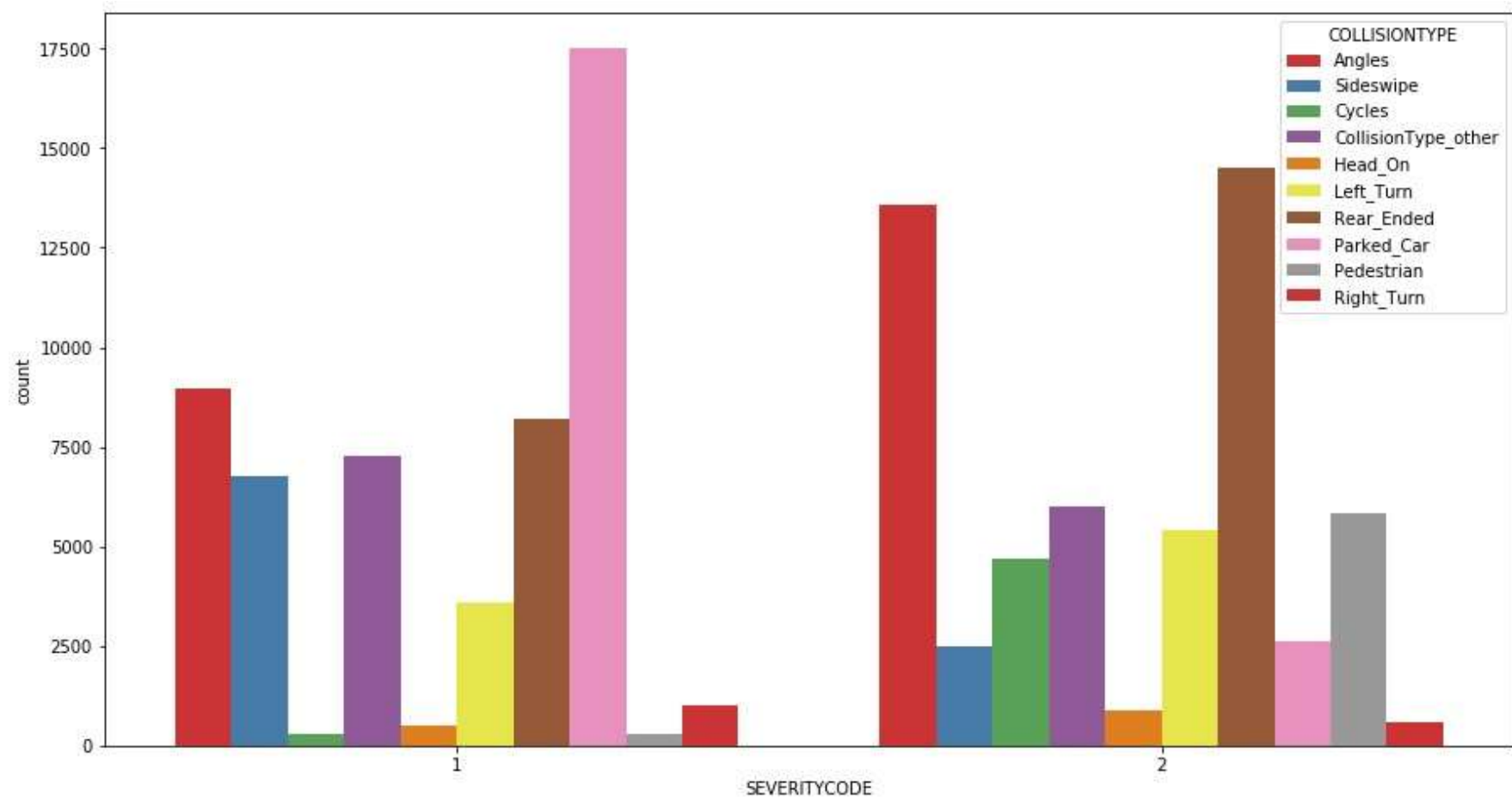
**Relationship between Road condition and severity of accident**



**Relationship between weather condition and severity of accident**

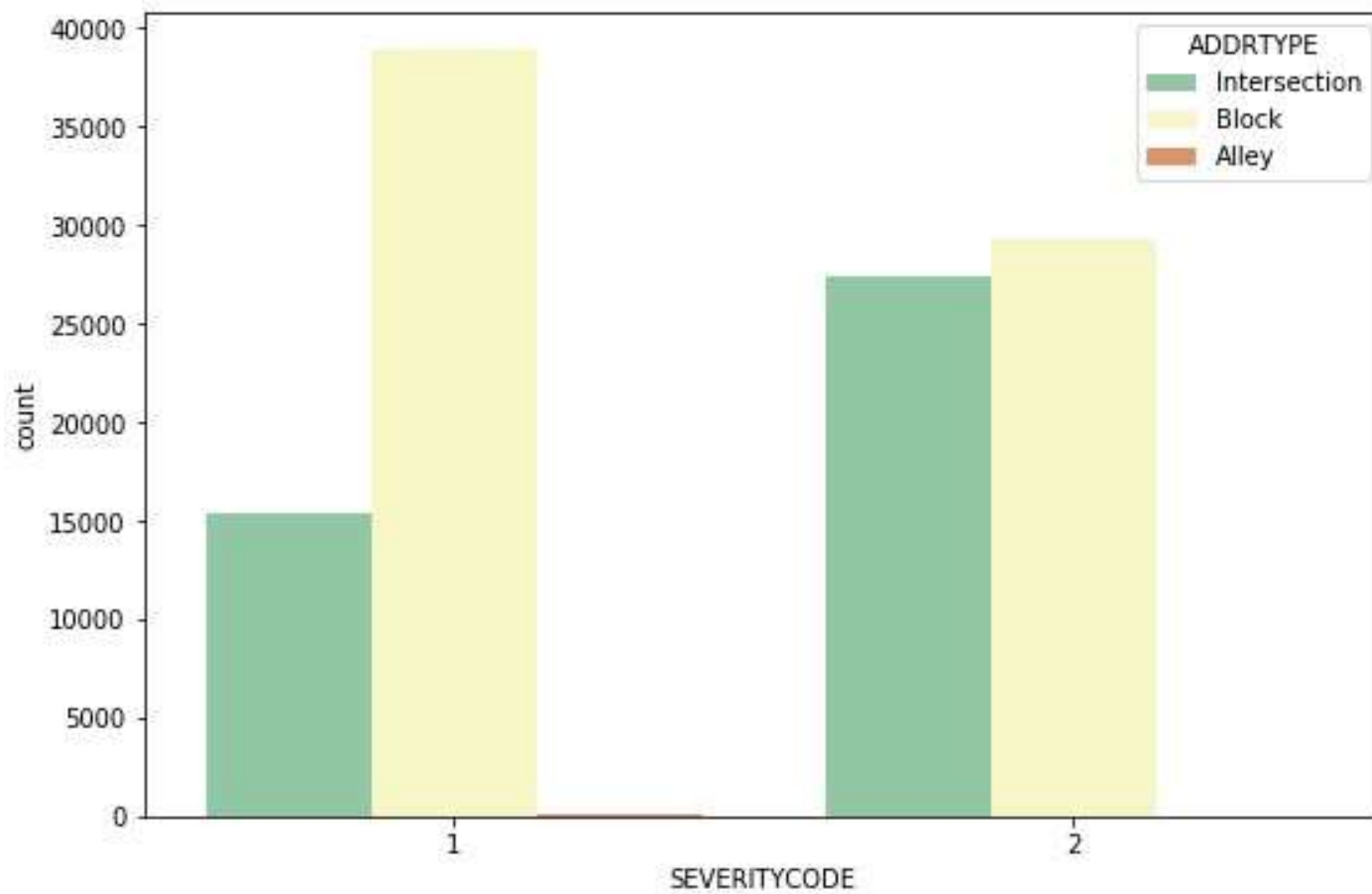


**Relationship between Junction type and severity of accident**



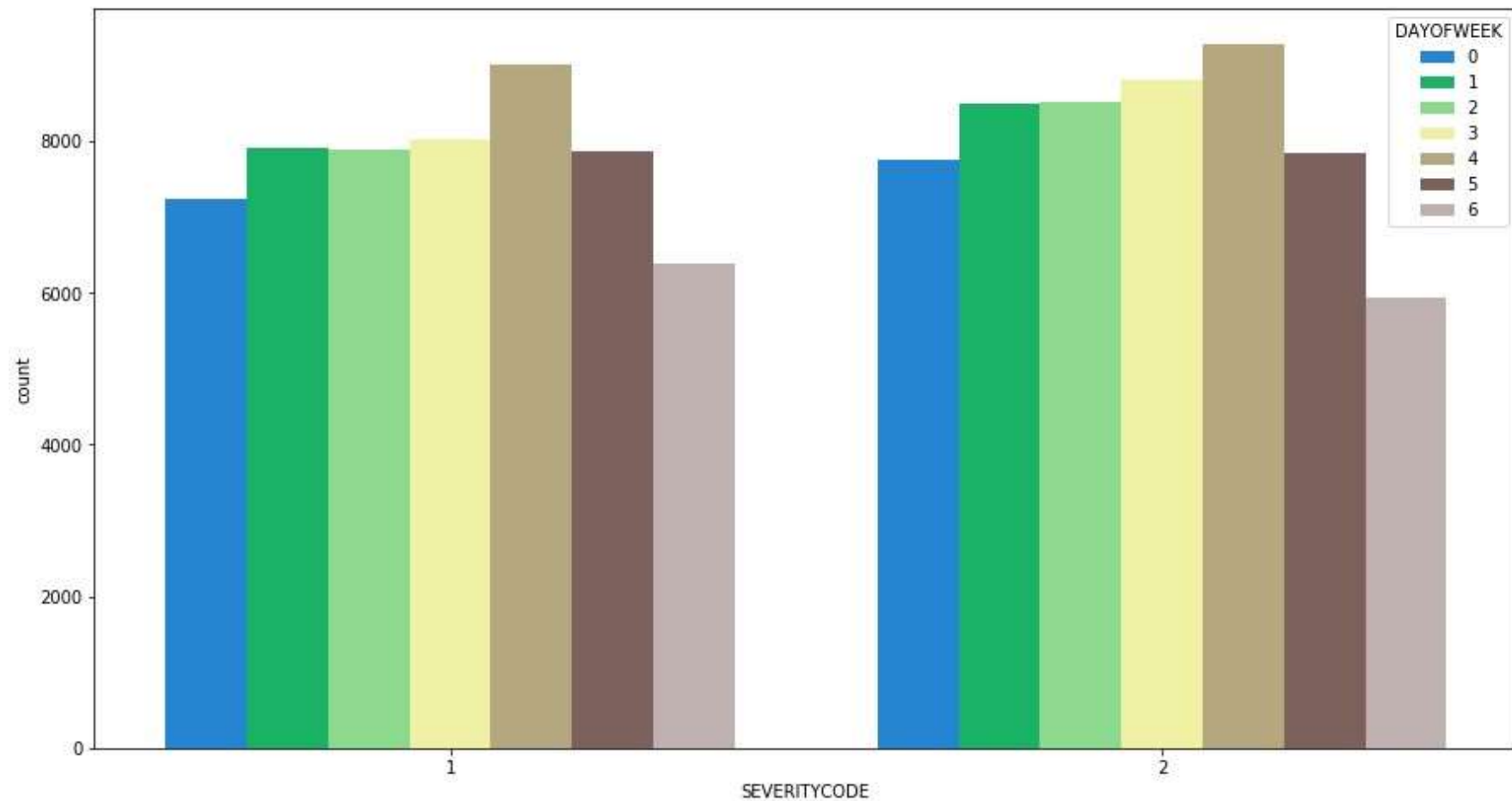
**Relationship between Collision type and severity of accident**



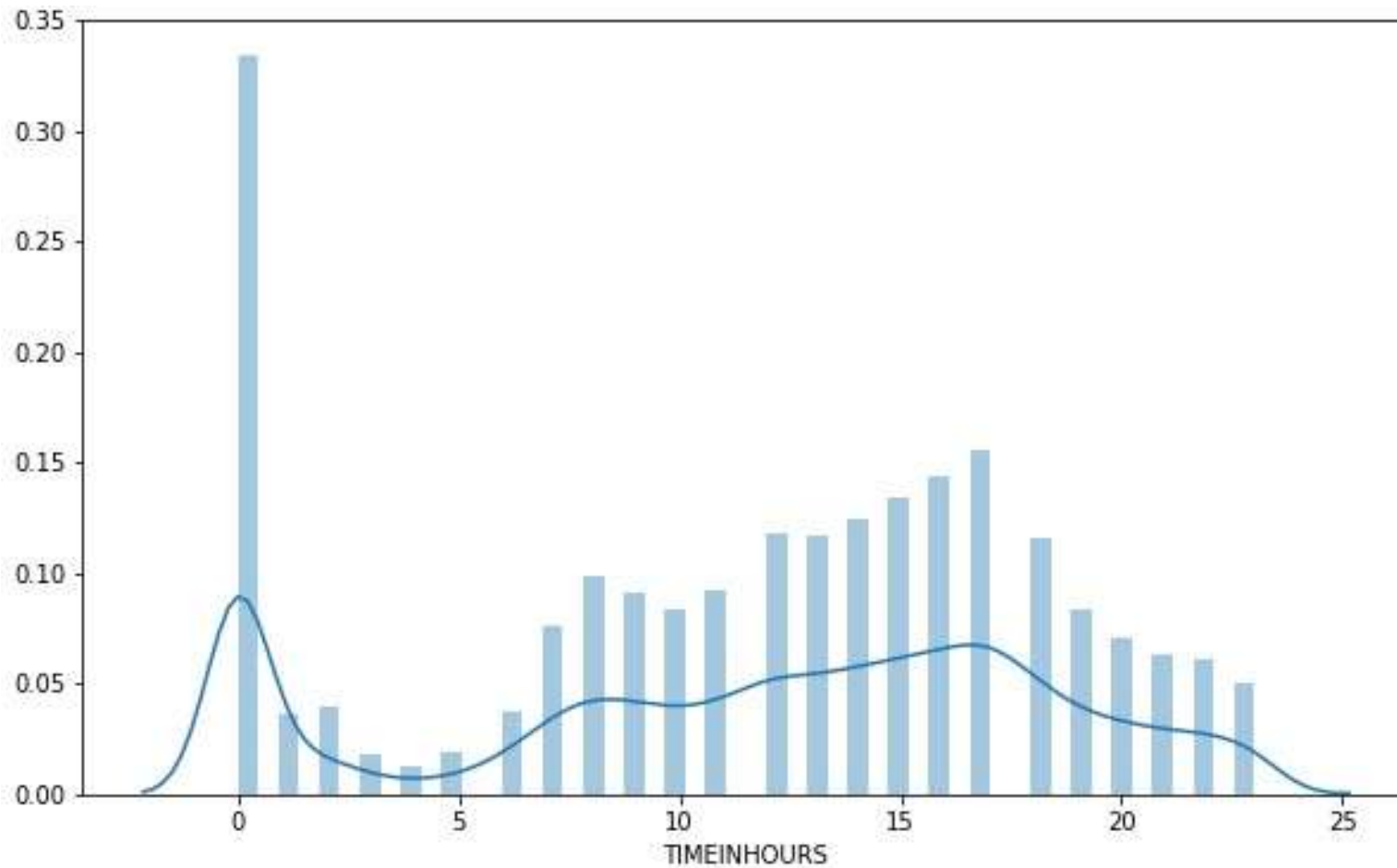


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**Relationship between address type and severity of accident**

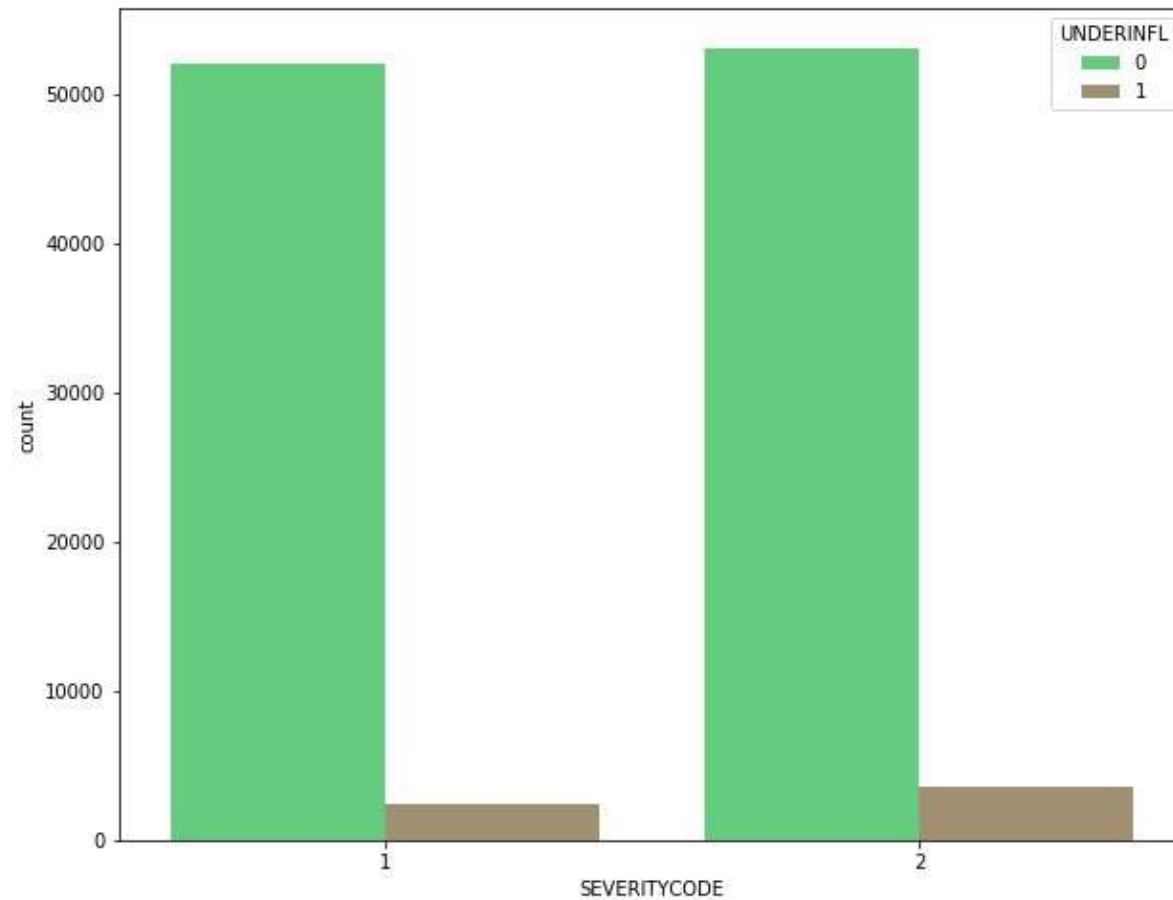


**Relationship between day of the week of the accident and severity of accident**



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**Relationship between hour of the accident and severity of accident:**



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**Relationship between driver under the influence of drug or alcohol and severity of accident:**

# Conclusion

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- Infrastructural factors like junction type – Effect severity of accident
- Individual Situational factors like driver under influence of drug or alcohol – Have not significant effect on severity of accident
- Cumulative situational factors like day of week and hours of day have effect on frequency of accidents.
- Environmental factor like weather and lighting conditions – Not have any significant effect on frequency and severity of accidents.