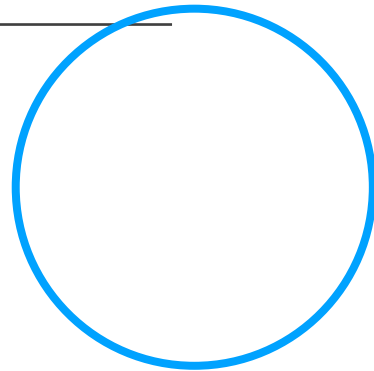


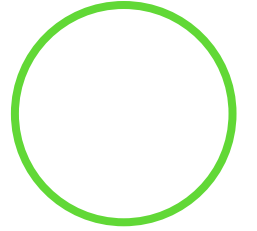
ACCIDENT SEVERITY PREDICTION

BY: MOHAMMED ABDUL QAYYUM KHAN

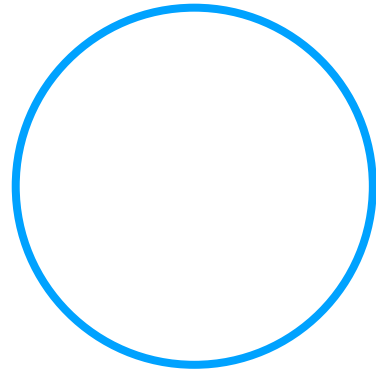




INTRODUCTION

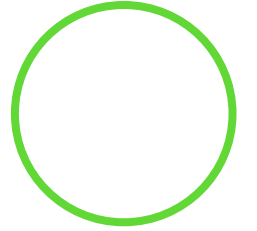


- Road accidents are a major problem causing thousands of deaths and even greater number of injuries each year.
- There are several reasons which contribute towards accidents such as conditions of roads, weather conditions, traffic situations etc.
- We try to predict the severity of road accidents which will help us identify the major contributing factors behind them.

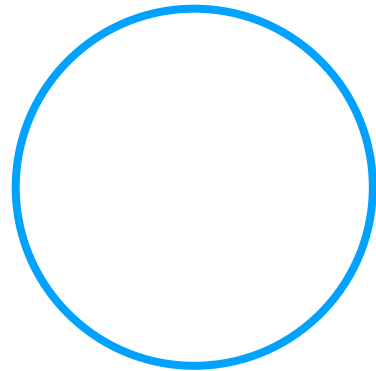


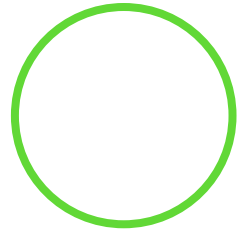


DATA PREPARATION



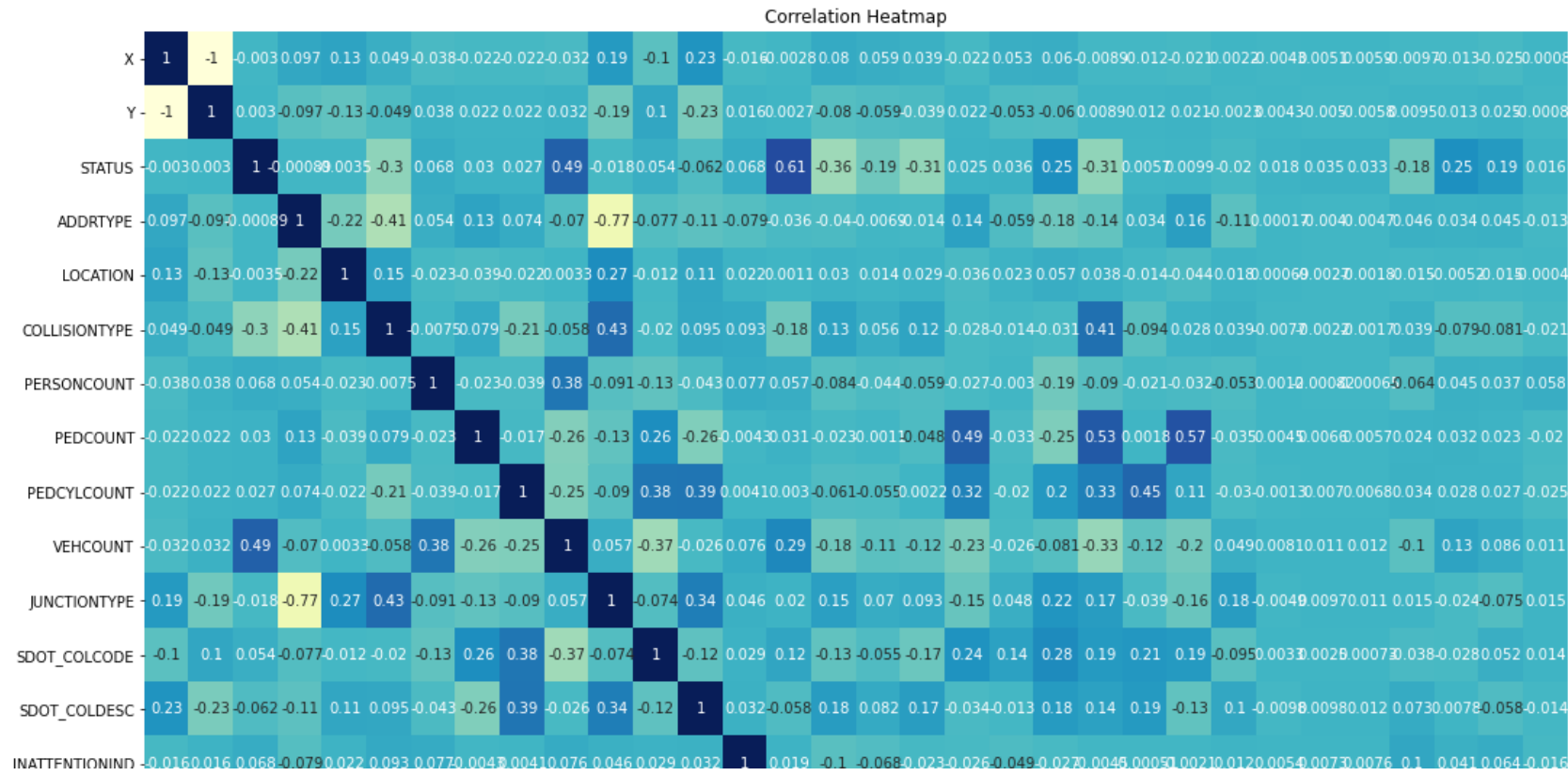
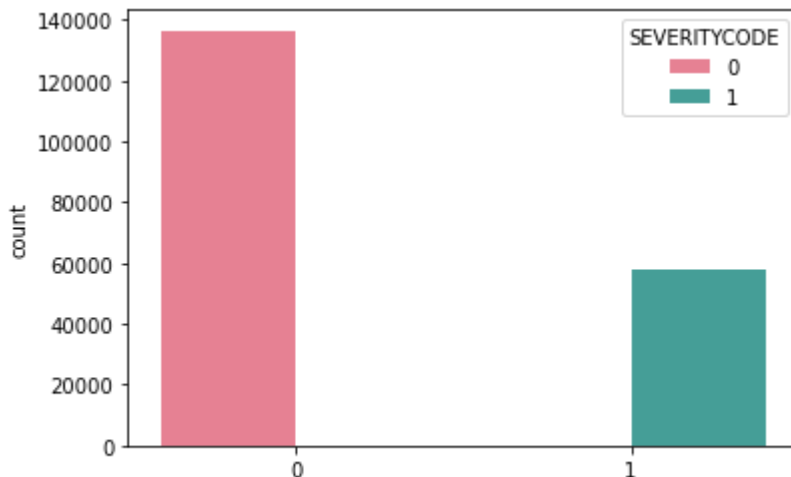
- The richness of our data directly determines the accuracy of our model.
- The data is available from the year 2004 to present in a CSV file format. It consists of 38 columns and over 190,000 rows.
- Most machine learning algorithms do not work with NULL/NaN and non-numeric values in data.
- Feature engineering involves extracting new features out of existing features based on our understanding of the data.
- Use encoding techniques to convert the categorical features into numeric values.
- Resampled the training data using SMOTE oversampling





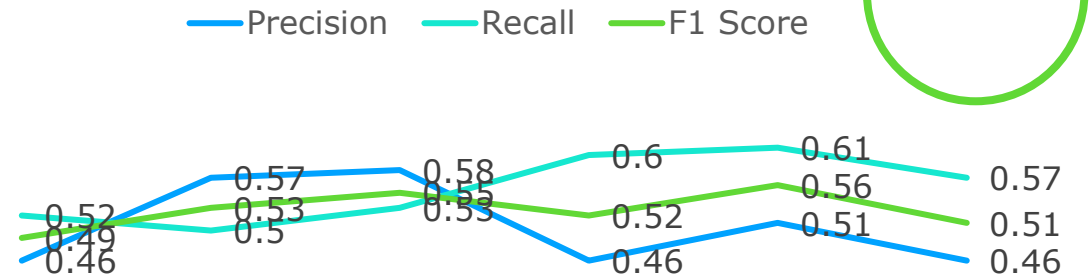
EXPLORATORY DATA ANALYSIS

- Use Matplotlib and Seaborn libraries for visualizing the data.
- Correlation heatmap visually displays how attributes are correlated to each other.



RESULTS

Classifier	Precision	Recall	F1 Score	Accuracy
Decision Tree Classifier	0.46	0.52	0.49	67.87
Random Forest Classifier	0.57	0.50	0.53	74.08
XGBoost Classifier	0.58	0.53	0.55	74.63
k-Nearest Neighbour	0.46	0.60	0.52	67.38
Support Vector Machines	0.51	0.61	0.56	71.17
Logistic Regression	0.46	0.57	0.51	67.91



Decision Tree Classifier Random Forest Classifier XGBoost Classifier k-Nearest Neighbour Support Vector Machines Logistic Regression



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