# Car Accident Severity

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1.Introduction:

1.1 Background:

Road Accident is the most undesirable and unexpected thing to occur to a road user, though they happen quite often. Unfortunately, we can see a minatory rise of road accidents , conspicuously highroad accidents over the past few years. It has a massive impact on society as well as in the economy of our country as there is an immense cost of fatalities and injuries.

1.2 Problem:

In an effort to reduce the frequency of car collisions in a community, an algorithm must be developed to predict the severity of an accident given the current weather, road and visibility conditions. When conditions are bad, this model will alert drivers to remind them to be more careful.

1.3 Interest:

Obviously, every person driving from one city to other or driving back home from work would be interested in weather and the road conditions about the possibility of you getting into a car accident and how severe it would be, so that you would drive more carefully or even change your travel if you are able to

## Data Understanding:

Our predictor or target variable will be 'SEVERITYCODE' because it is used measure the severity of an accident from 0 to 5 within the dataset. Attributes used to weigh the severity of an accident are 'WEATHER', 'ROADCOND’, 'LIGHTCOND',’ The total number of people involved in the collision’ and’ The number of vehicles involved in the collision.

Severity codes are as follows:

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| 0 | Little to no Probability (Clear Conditions) |
| 1 | Very Low Probability - Chance or Property Damage |
| 2 | Low Probability - Chance of Injury |
| 3 | Mild Probability - Chance of Serious Injury |
| 4 | High Probability - Chance of Fatality |

There are three types of machine learning algorithms supervised ,unsupervised learning, and reinforcement learning . Among these three broad categories of machine learning classification approaches the supervised learning approach is used because of its competency in modelling and regulating dynamic systems. Here, I used the four most popular machine learning techniques for car accident severity. Those are Decision Tree, KNN , SVM , Logistic Regression.