1. Introduction

There is a huge impact on society due to traffic accidents where there are great costs of fatalities and injuries. In recent years, there is an increase in the research's attention to determine the significantly affect the severity of the driver's injuries which are caused due to road accidents accurate, and comprehensive accident records are the basis of accident analysis. the effective use of accident records depends on some factors, like the accuracy of the data record relation, and data analysis. There are many approaches applied to this scenario to study the problem. A recent study illustrated that the residential and shopping sites are more hazardous than village areas might have been predicted, the frequencies of the casualties were higher near the zones of residence possibly because of the higher exposure. A study revealed that the casualty rates among the residential areas are classified as relatively deprived and significantly higher than those from relatively affluent areas.

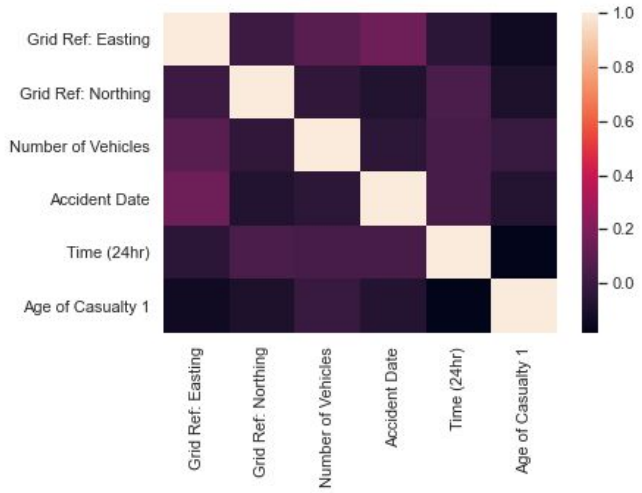
accidents have become very common these days. Nearly 1.25 million people die in road crashes each year, on average, 3,287 deaths a day. Moreover, 20—50 million people are injured or disabled annually. Road traffic crashes rank as the 9th leading cause of death and accounts for 2.2% of all deaths globally. In this contest to reduce the severity of the accidents machine learning and neural techniques have been used for analysis. Car accidents are one of the common types of Collisions occurring everywhere globally every day. By analyzing the different factors which cause the collision. In this section, we are discussing the data Capstone project topic Car accident severity.

```
dtype: int64
```

```
In [41]: import seaborn as sns
```

```
In [42]: sns.set(style="white")
         sns.set(style="whitegrid", color_codes=True)
         sns.heatmap(df.corr())
```

```
Out[42]: <matplotlib.axes._subplots.AxesSubplot at 0x220ccc6f340>
```



2.Business Understanding

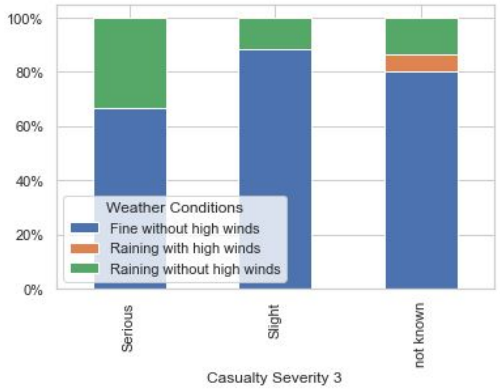
A car collision or car accident one of the collision type in Road accidents. According to Corrigan [1], despite collecting large quantities of traffic data, Transportation Departments of all levels are unable to use such data to good effect. Founded in 2015, a start-up called ODN could predict when and where accidents are most likely to happen. Officials could use such information to direct safety efforts at the stretches of a t of this research, some of the developed countries like US, UK governments could use the information generated from a prediction system with a Neural Network predicting the accident severity and use this information to enhance the laws to build safer roads for the future. In this project, we are dealing with the all possible ways to reach the destination by overcoming car accident severity with the different critical traffic conditions on the way to the journey. By prediction car accident severity improve the traffic safety measures. And implements the traffic rules accordingly to governments Better severity conditions.

3.ObjectivesThe objectives of this Capstone project are mainly the following:

1.Gather a comprehensive database of road accident statistics for built-up roads with factors that affect road safety which has been provided by the database.

In [43]:
```
import matplotlib.ticker as mtick
import matplotlib.pyplot as plt
df.groupby(['Casualty Severity 3', 'Weather Conditions']).size().groupby(level=0).apply(
    lambda x: 100 * x / x.sum()
).unstack().plot(kind='bar', stacked=True)
plt.gca().yaxis.set_major_formatter(mtick.PercentFormatter())
plt.show
```

Out[43]: <function matplotlib.pyplot.show(*args, **kw)>



2.Analyze data for the factors, which can impact accident rates (e.g. light conditions, weather, road surface conditions, types of junctions.)
3. Determine the type of road classes with the highest and lowest amount of accident rates from analyzing tables of road accident statistics and charts created from the database UK-2019 accident set.
4.Suggest appropriate measures for the factors and the road class determined the most dangerous for improving car accident severity.

Data analysis and Results and conclusions

For the present project from data UK accidents set the data analysis is follows. From the bar plot charts, we can observe the Car accident severity with different attributes. The main attributes consider Road class, Road surface, Weather conditions, light condition from— 1,5 . Car accident severity without high winds, without high winds and remaining and 3,4,5,6,7 Snowing without high winds, Fine with high winds, raining with high winds, snowing with high winds, Fog or mist —if hazard ,risky and severity . Car accident severity is high for Road class from fig.5 6,3 high severity ,1,2,4 ,5 high risk.