Code:

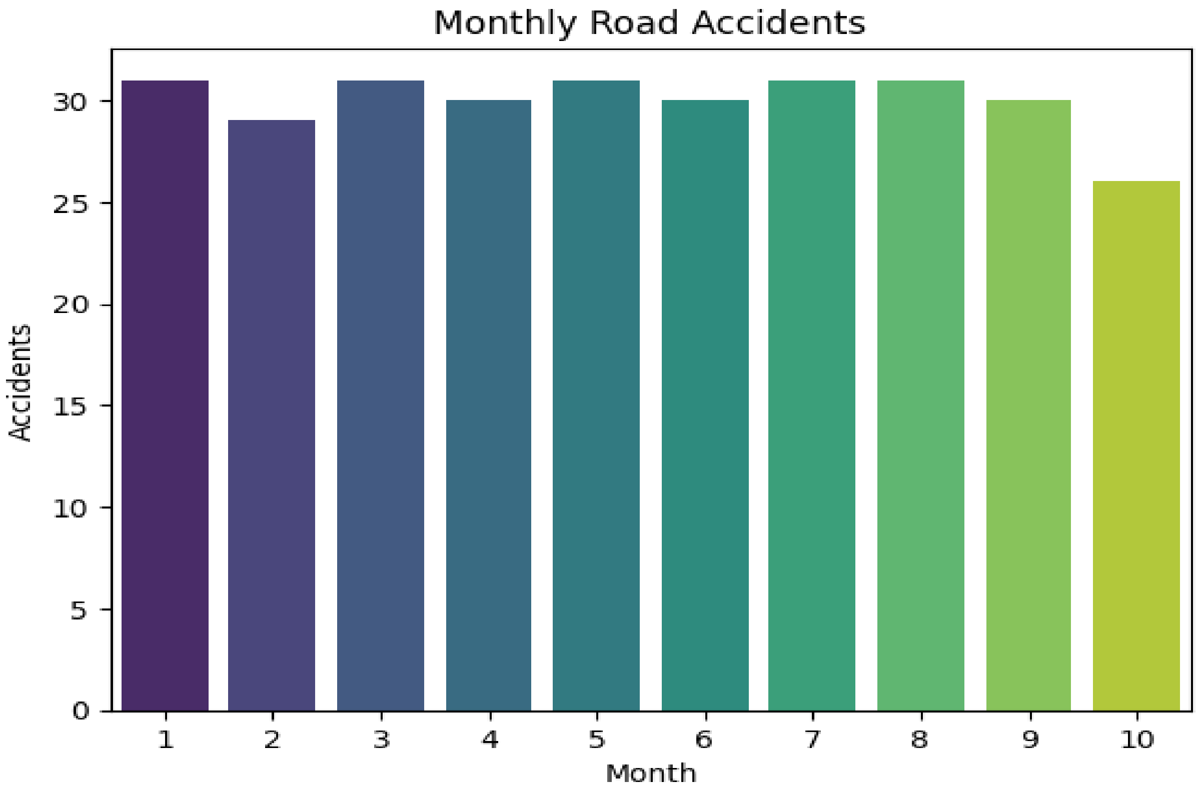
```
from google.colab import files
uploaded = files.upload()
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

# Load uploaded CSV
df = pd.read_csv("road_accidents.csv")

# Show basic info
print("Data Head:\n", df.head())
print("\nMissing Values:\n", df.isnull().sum())

# Drop rows with missing values in important columns
df.dropna(subset=['Accident_Severity', 'Number_of_Vehicles'], inplace=True)

# Convert Date to datetime format
df['Date'] = pd.to_datetime(df['Date'])

# Extract Month
df['Month'] = df['Date'].dt.month

# 1. Monthly accident count
monthly_accidents = df['Month'].value_counts().sort_index()
sns.barplot(x=monthly_accidents.index, y=monthly_accidents.values,
palette='viridis')
```

```
plt.title("Monthly Road Accidents")
plt.xlabel("Month")
plt.ylabel("Accidents")
plt.show()

# 2. Severity distribution
severity_counts = df['Accident_Severity'].value_counts()
sns.barplot(x=severity_counts.index, y=severity_counts.values, palette='rocket')
plt.title("Accident Severity")
plt.xlabel("Severity")
plt.ylabel("Count")
plt.show()

# 3. Number of vehicles involved
sns.histplot(df['Number_of_Vehicles'], bins=10, kde=True)
plt.title("Vehicles Involved in Accidents")
plt.xlabel("Number of Vehicles")
plt.ylabel("Frequency")
plt.show()

# 4. Accidents by weather
weather_accidents = df['Weather_Conditions'].value_counts()
sns.barplot(x=weather_accidents.index, y=weather_accidents.values,
palette='coolwarm')
plt.title("Accidents by Weather")
plt.xlabel("Weather")
plt.ylabel("Count")
plt.xticks(rotation=45)
plt.show()

# 5. Correlation heatmap
numeric_df = df.select_dtypes(include='number')
sns.heatmap(numeric_df.corr(), annot=True, cmap='magma')
plt.title("Correlation Matrix")
plt.show()
```

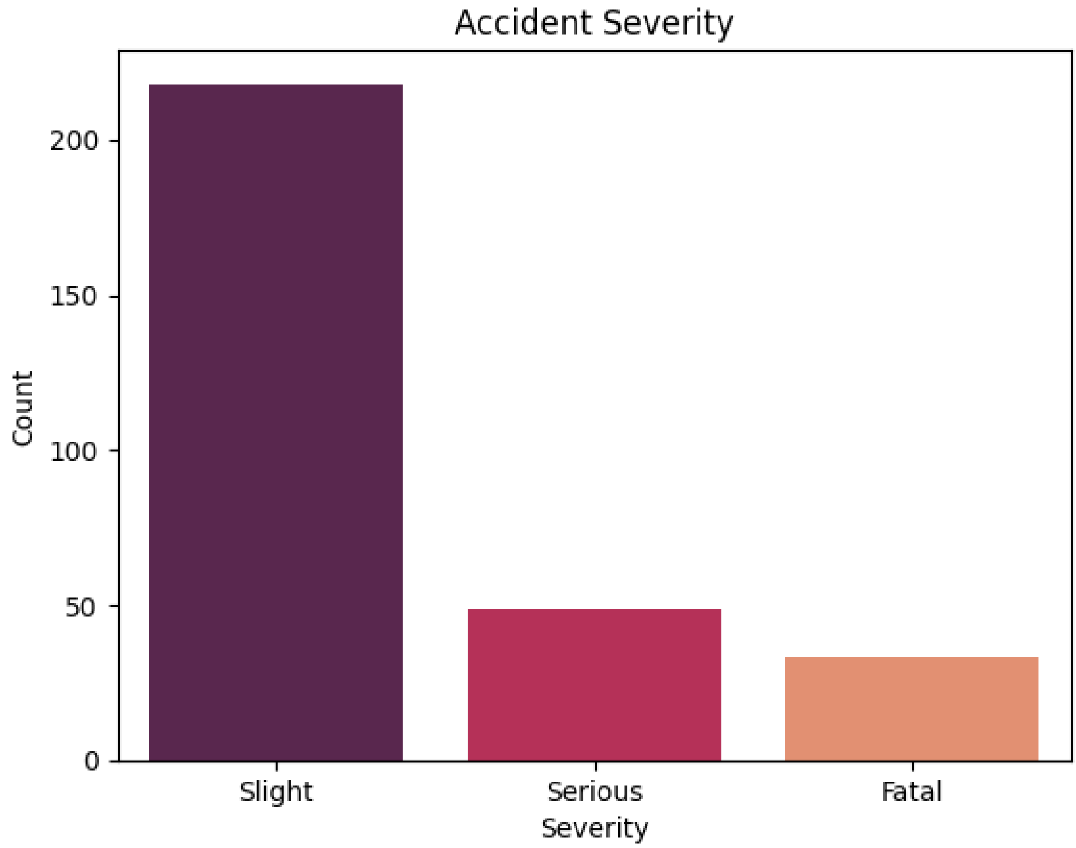
Result:

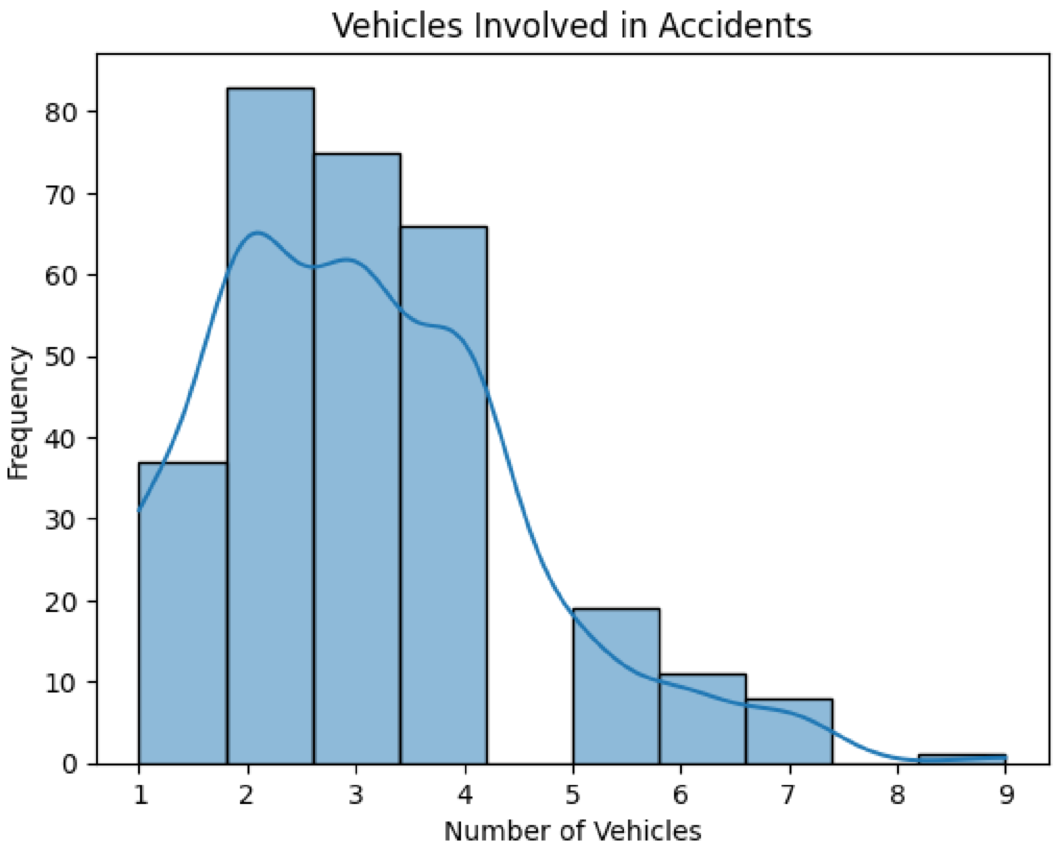
```
Data Head:
         Date   Time   Location Accident_Severity  Number_of_Vehicles  \
0  2024-01-01  22:48  Highway 1             Fatal                   1
1  2024-01-02  05:52  Highway 2            Slight                   2
2  2024-01-03  18:23     City C            Slight                   4
3  2024-01-04  20:49  Highway 2            Slight                   3
4  2024-01-05  14:45  Highway 2             Fatal                   4

  Weather_Conditions       Light_Conditions Road_Surface_Conditions
0               Snow Darkness - Lights On                     Wet
1               Rain               Daylight                     Wet
2               Rain Darkness - No Lights                     Dry
3              Clear               Daylight                     Wet
4              Clear               Daylight                     Dry

Missing Values:
 Date                       0
Time                       0
```

```
Location              0
Accident_Severity         0
Number_of_Vehicles        0
Weather_Conditions        0
Light_Conditions          0
Road_Surface_Conditions    0
dtype: int64
<ipython-input-2-9c2090a145d2>:23: FutureWarning:


Passing `palette` without assigning `hue` is deprecated and will be
removed in v0.14.0. Assign the `x` variable to `hue` and set
`legend=False` for the same effect.


  sns.barplot(x=monthly_accidents.index,
y=monthly_accidents.values, palette='viridis')
```

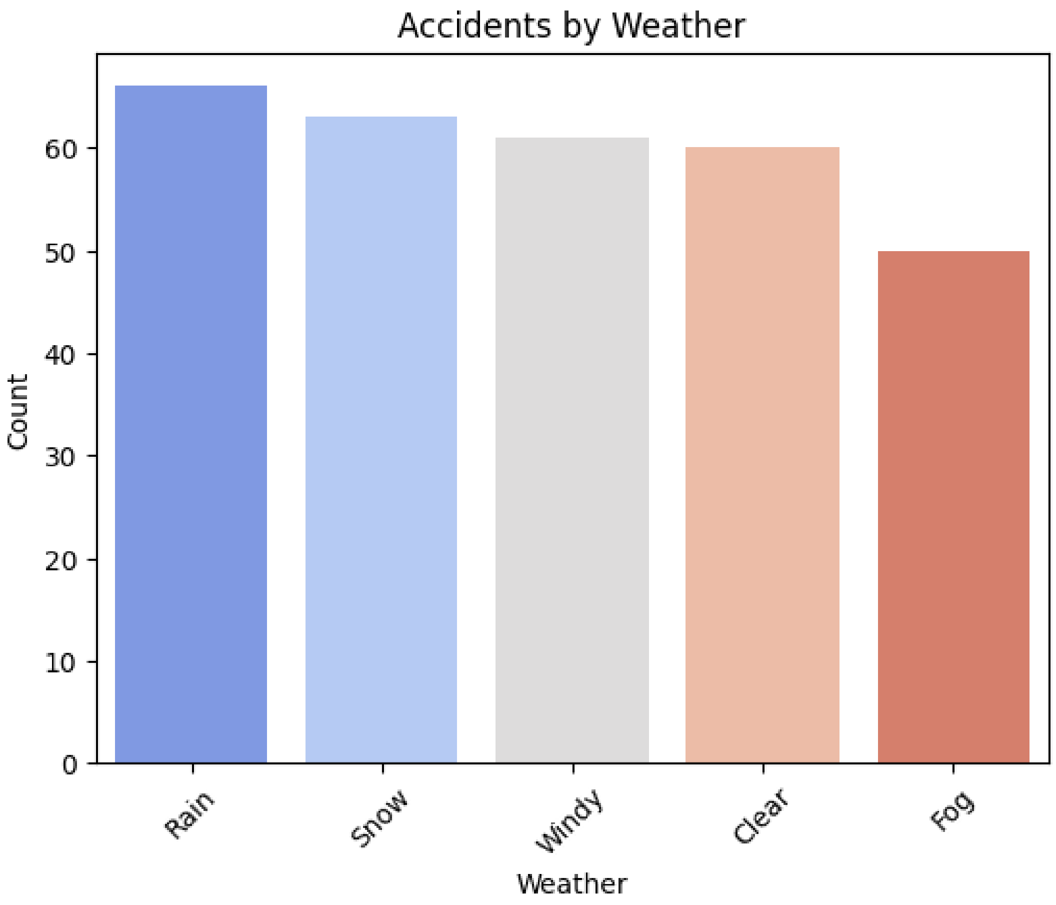


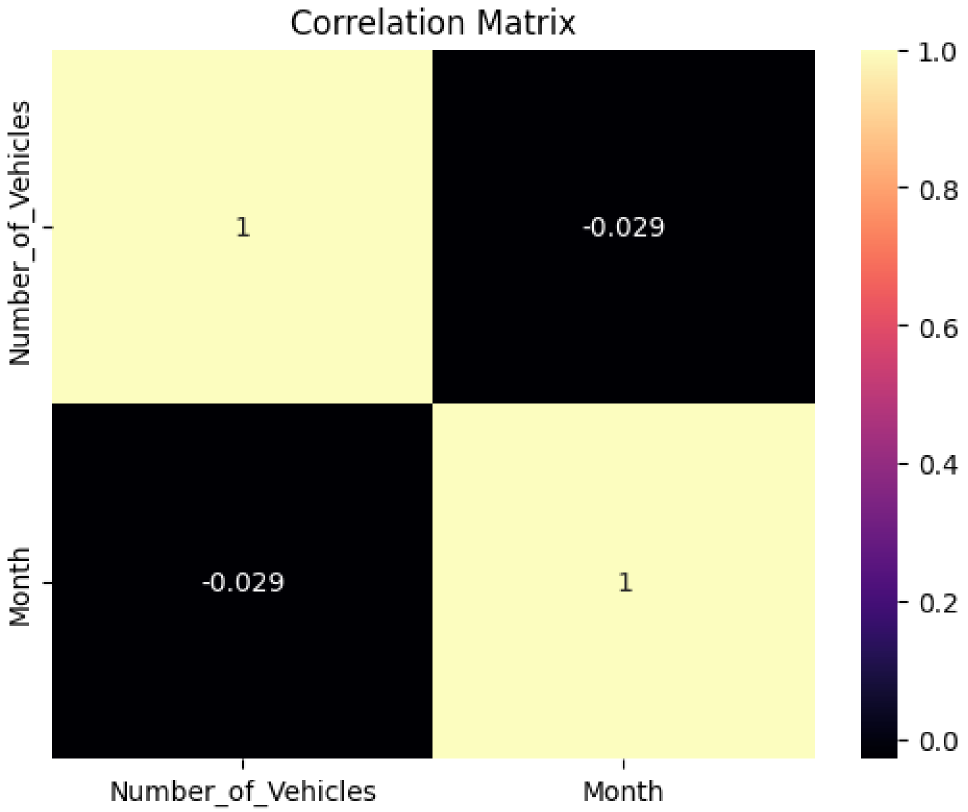
```
<ipython-input-2-9c2090a145d2>:31: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14.0. Assign the `x` variable to `hue` and set `legend=False` for the same effect.

  sns.barplot(x=severity_counts.index, y=severity_counts.values, palette='rocket')
```



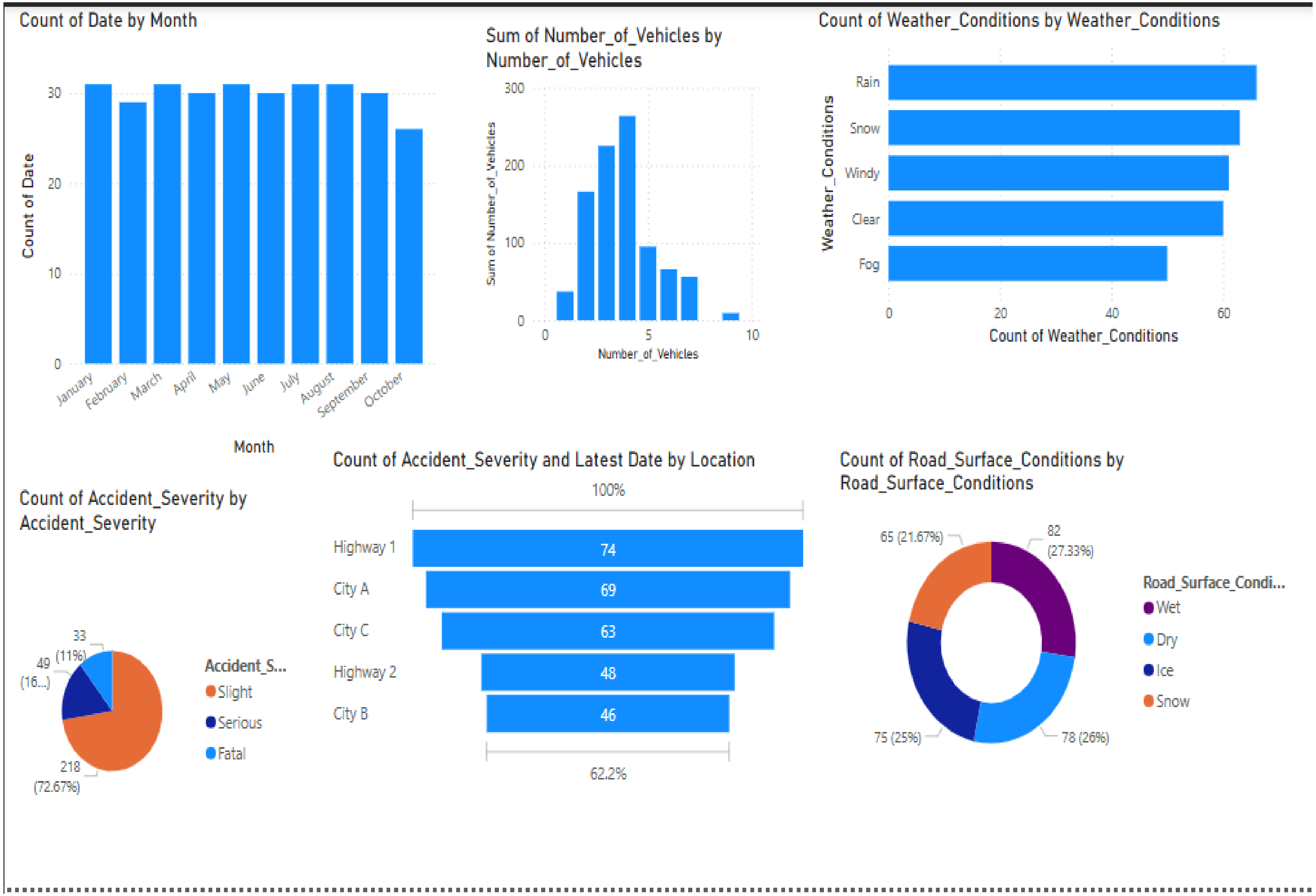


```
<ipython-input-2-9c2090a145d2>:46: FutureWarning:


Passing `palette` without assigning `hue` is deprecated and will be
removed in v0.14.0. Assign the `x` variable to `hue` and set
`legend=False` for the same effect.


  sns.barplot(x=weather_accidents.index, y=weather_accidents.values,
palette='coolwarm')
```


Accidents by Weather
Count
0
10
20
30
40
50
60
Rain
Snow
Windy
Clear
Fog
Weather


Correlation Matrix
Number_of_Vehicles
Month
1
-0.029
-0.029
1
Number_of_Vehicles
Month
1.0
0.8
0.6
0.4
0.2
0.0

Dashboard:


Count of Date by Month
Count of Date
30
20
10
0
January
February
March
April
May
June
July
August
September
October
Month
Sum of Number_of_Vehicles by Number_of_Vehicles
Sum of Number_of_Vehicles
300
200
100
0
0
5
10
Number_of_Vehicles
Count of Weather_Conditions by Weather_Conditions
Weather_Conditions
Rain
Snow
Windy
Clear
Fog
0
20
40
60
Count of Weather_Conditions
Count of Accident_Severity by Accident_Severity
33 (11%)
49 (16...)
218 (72.67%)
Accident_S...
● Slight
● Serious
● Fatal
Count of Accident_Severity and Latest Date by Location
100%
Highway 1
City A
City C
Highway 2
City B
74
69
63
48
46
62.2%
Count of Road_Surface_Conditions by Road_Surface_Conditions
65 (21.67%)
82 (27.33%)
75 (25%)
78 (26%)
Road_Surface_Condi...
● Wet
● Dry
● Ice
● Snow