

WEATHER VS. WHEELS

DO THE SKIES SHAPE NYC ACCIDENTS ?

IST 652 Scripting for data analysis

Members:-

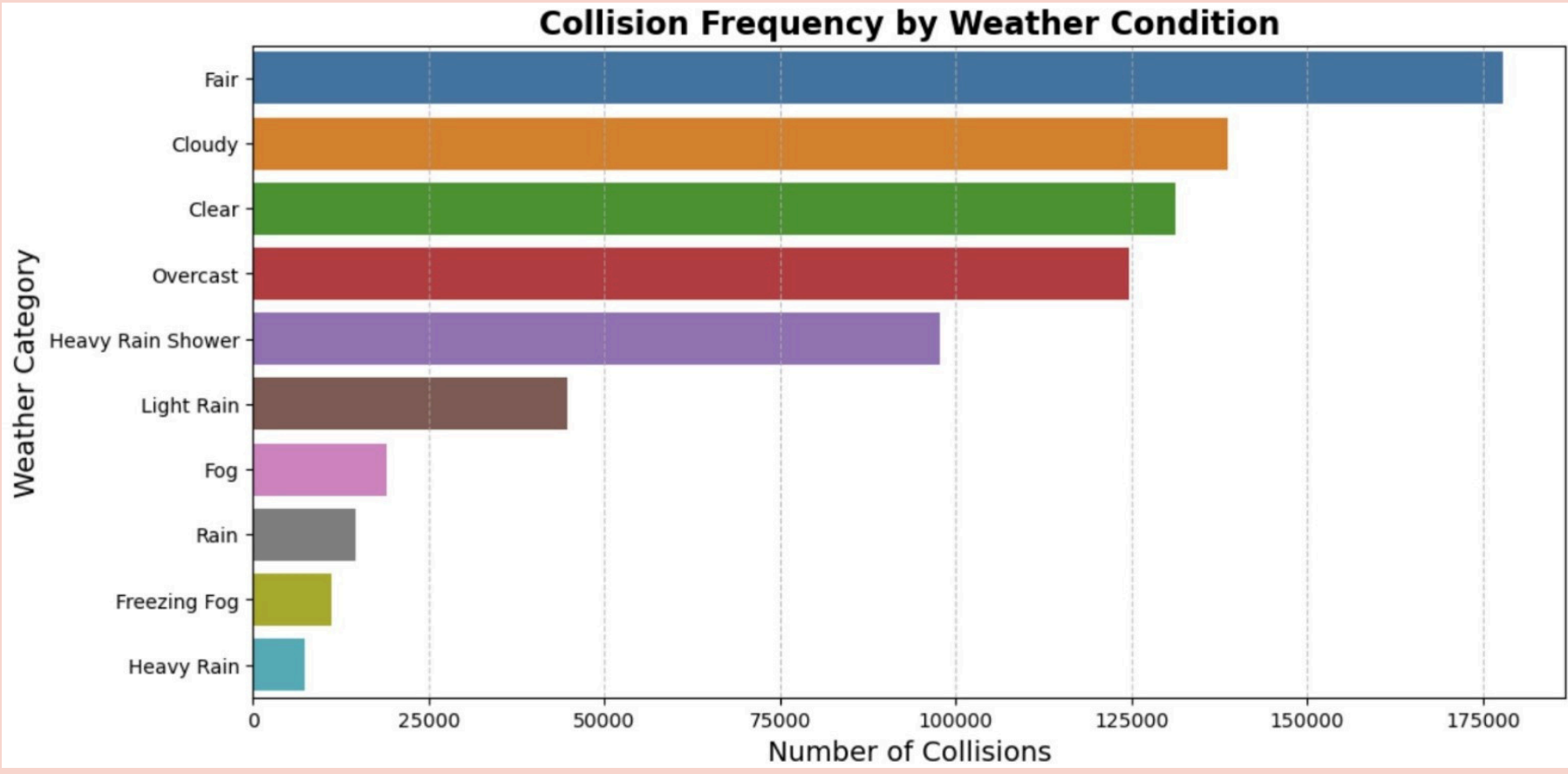
- 1.Sukhad
- 2.Mihir
- 3.Vaibhav
- 4.Biswadip

Objective:-

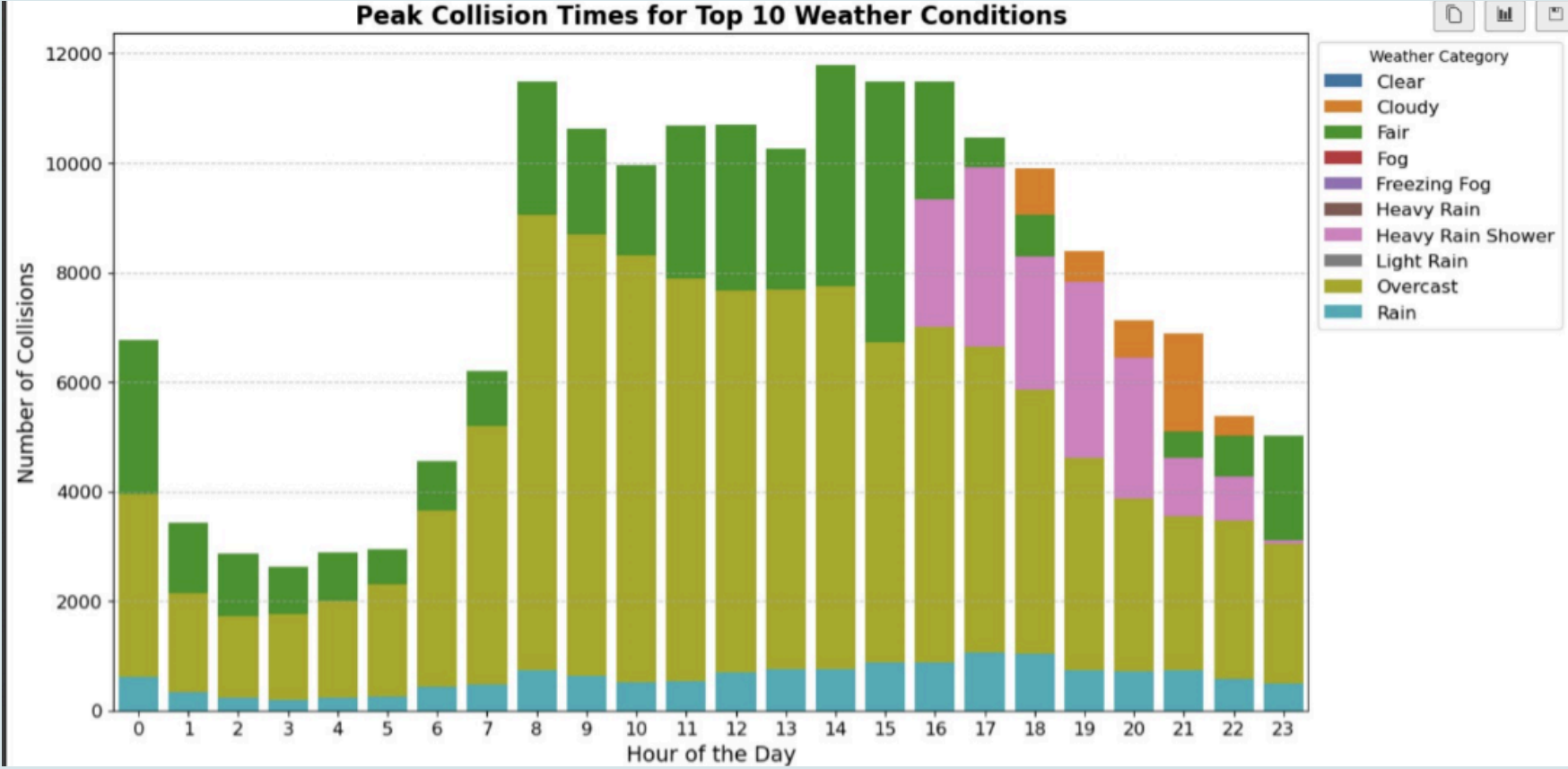
The story unfolds on the bustling streets of New York City, where cars, cyclists, and pedestrians, etc. navigate the daily chaos. Enter the antagonist: weather. Rain, snow, fog, and heat turn the streets into unpredictable battlegrounds. Using collision(“<https://catalog.data.gov/dataset/motor-vehicle-collisions-crashes>”) and weather(“<https://dev.meteostat.net/python/>”) datasets, we analyze how weather impacts accidents across boroughs, presenting findings that aim to bridge the gap toward a safer urban future..

Methodology:

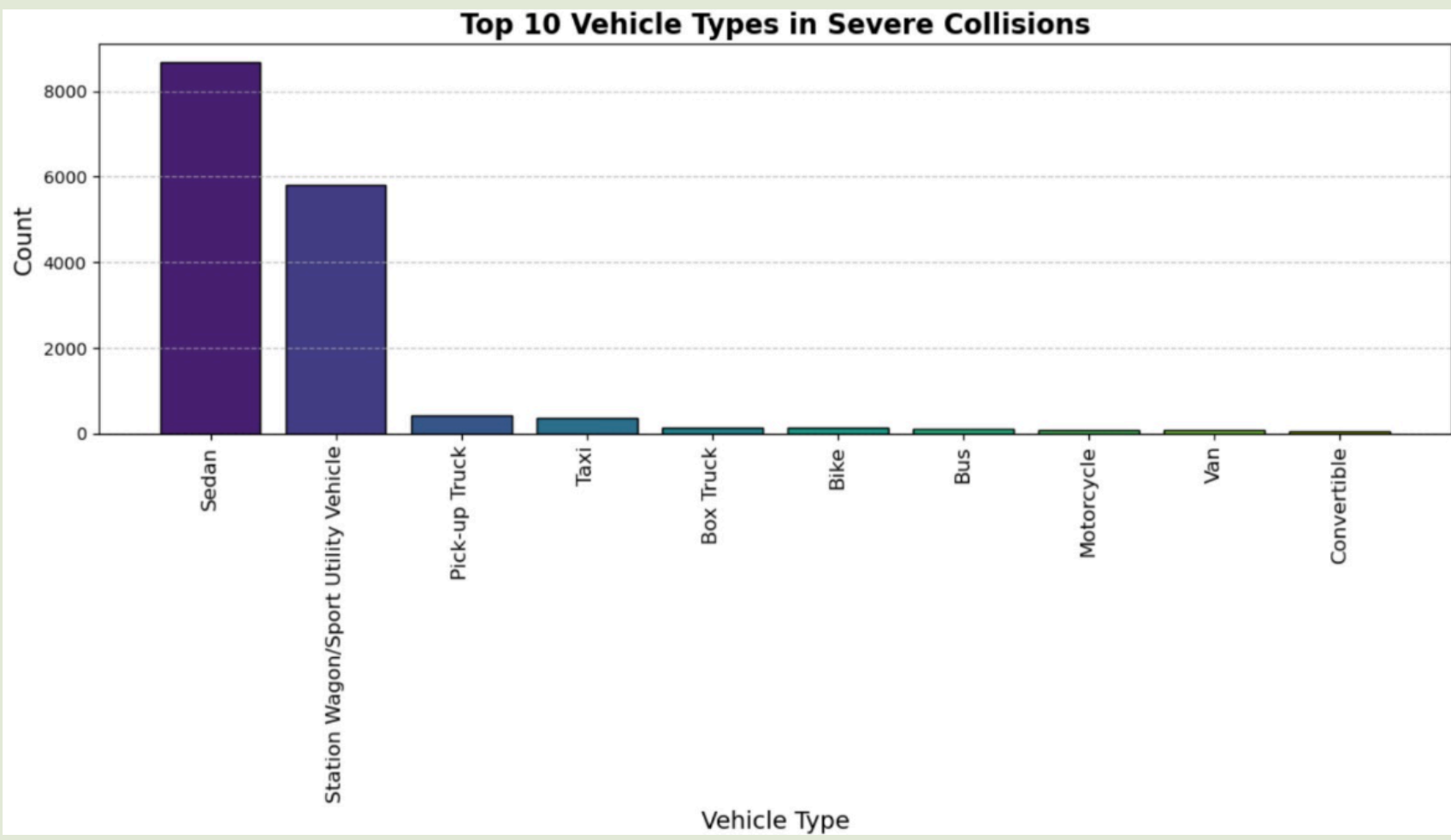
- We merged collision and weather datasets to create merged data, linking data based on timestamps and locations.
- Additional features like weather categories and severity levels were derived to enhance the dataset.
- We addressed null values, standardized columns, and filtered subsets of interest (e.g., borough-specific data, vehicle types like Sedans) for focused analysis.
- Also utilized interactive maps (via folium) and derived insights on the influence of weather, vehicle types, and borough-specific trends.



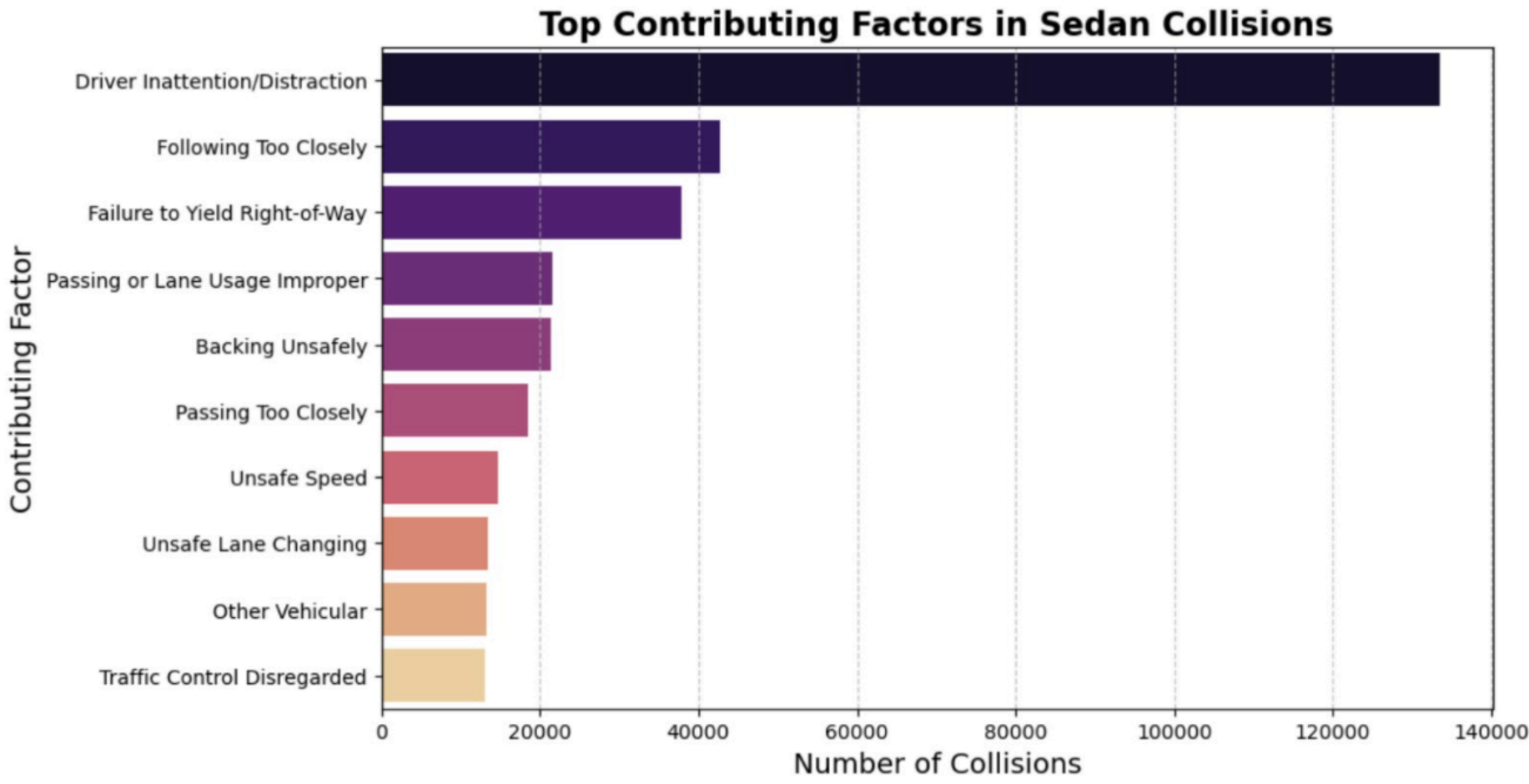
How do weather conditions influence the frequency and severity of vehicle collisions?



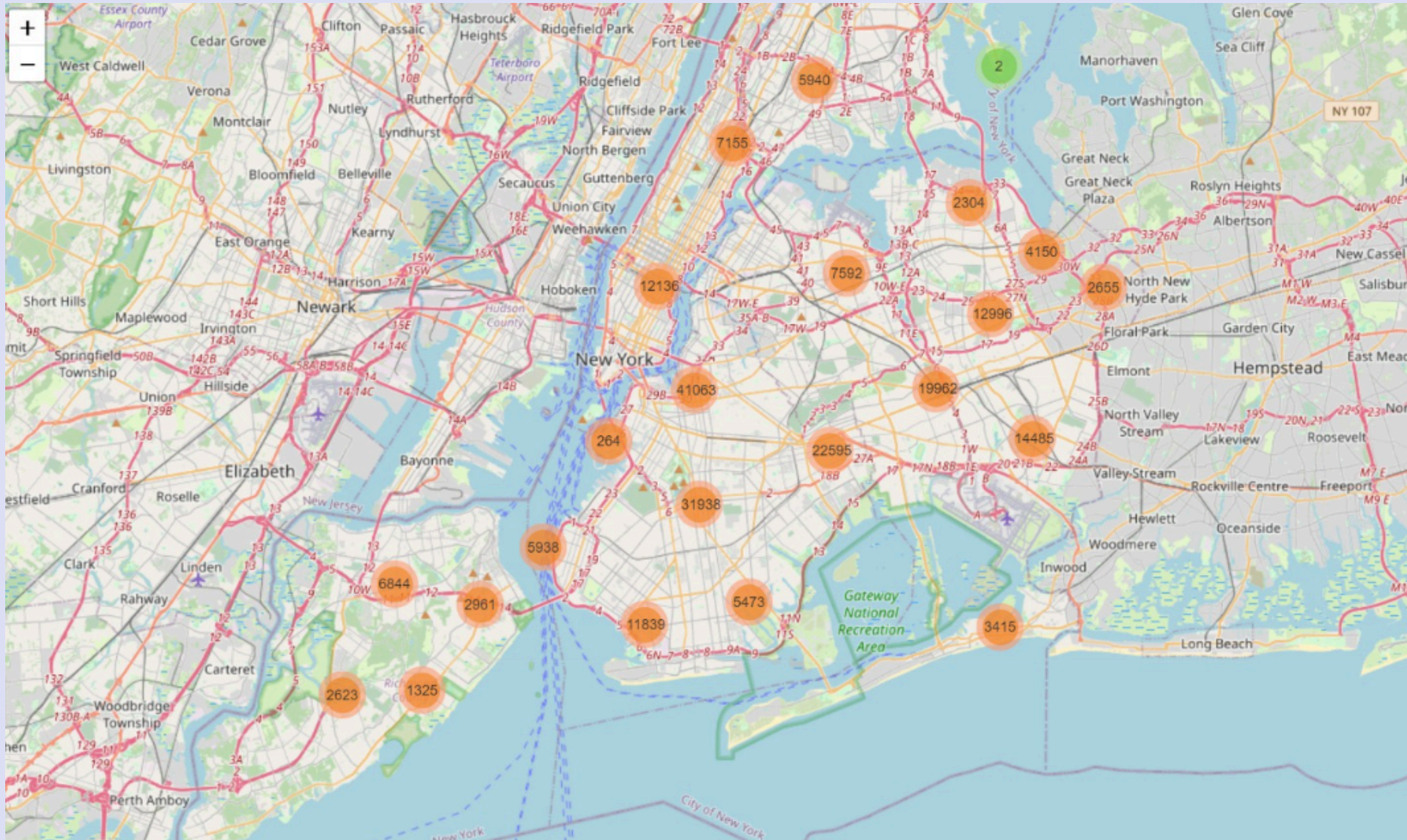
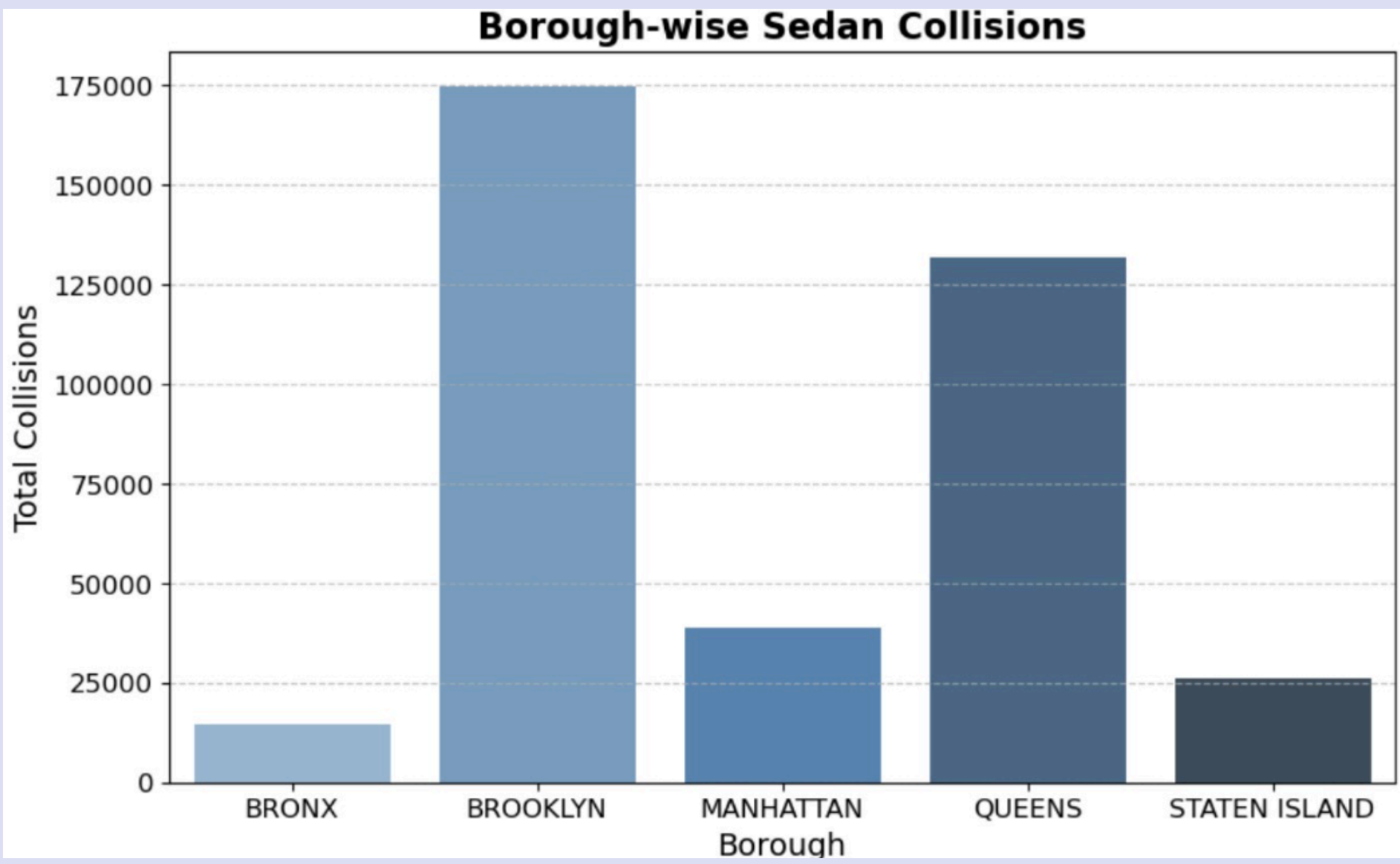
What are the peak times for vehicle collisions under different weather conditions?



Which vehicle categories get affected most in fatal crashes?



Which top 10 contributing factors are most commonly associated with severe sedan collisions?



Which location (hotspots) have the highest collision frequency for sedan?

FACTORS BEHIND NYC ACCIDENTS:-

Adverse Weather Impact:

"Fair days observed more collision of vehicles."

Peak Times:

"Most accidents occur during rush hours (7 AM - 9 AM)"

Leading Cause:

"Driver inattention is the top contributing factor in severe collisions for Sedan."

Hotspots:

"Brooklyn area sees the most frequent collisions for Sedans."