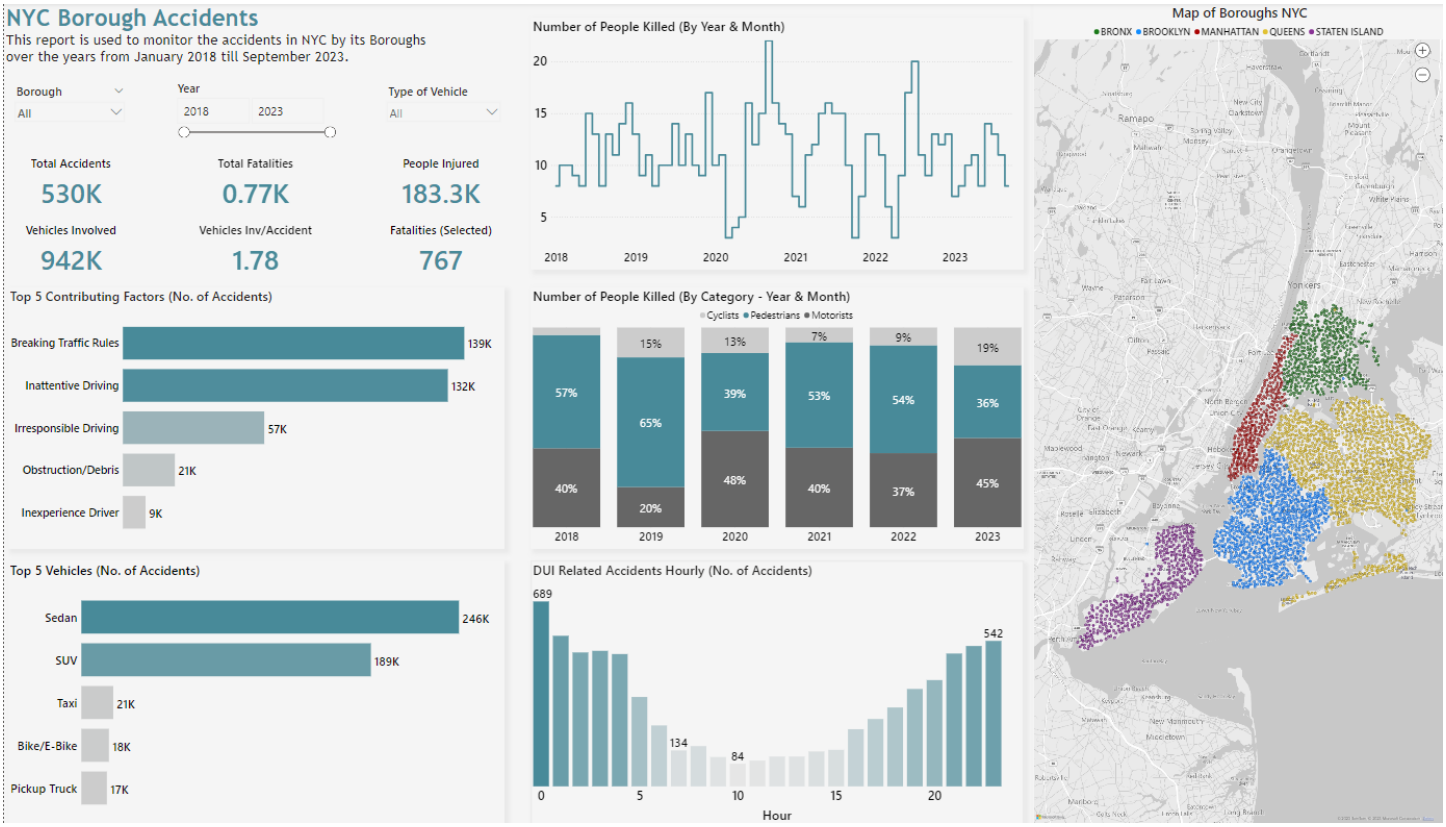
Arbash – NYC Accidents

Overview

The dashboard tracks New York City Vehicle Accidents from 2018 to 2023, focusing on the number of people killed with top contributing factors for accidents as well as top vehicles involved in accidents.



Dataset Description:

The Motor Vehicle Collisions Dataset (Dataset) contains details on the crash event. Each row represents a crash event. The Motor Vehicle Collisions data tables contain information from all police reported motor vehicle collisions in NYC.
The Dataset originally contained 29 columns, and has data from 2013 onwards. Since the dataset was huge (~2 million rows), I chose data from 2018 onwards, removed some unnecessary columns, added some columns for my convenience, as well as cleaned data to prepare the data set for my dashboard.

- Each row in the dataset is an accident
- The *Collision_ID* is the unique ID that the NYPD identify the accident ("4182249")
- There are 4 Descriptive attributes for each accident:
  - *Borough/Location* has 5 Distinct Values
  - *Vehicle 1 Type* has 12 Distinct Values
  - *Vehicle 2 Type* has 12 Distinct Values
  - *Contributing Factor* has 17 Distinct Values
- There are 6 Date/Time Fields:
  - *Crash Date, Crash Time, Hour, Weekday, Month, Year*
- There are 9 Measures:
  - *Vehicles Involved, Persons Injured, Pedestrians Injured, Cyclist Injured, Motorist Injured, Persons Killed, Pedestrians Killed, Cyclist Killed, Motorist Killed*
- There are 2 Location Fields:
  - *Latitude, Longitude*

Find the columns and their example value below:

Columns	Values (example)
Crash Date	8/3/2019
Crash Time	17:25
Hour	17

Weekday	Saturday
Year	2019
Month	8
Bouroughs	STATEN ISLAND
Collision_ID	4182249
Latitude	40.501465
Longitude	-74.24523
Vehicles Involved	3
Persons Injured	0
Pedestrians Injured	0
Cyclist Injured	0
Motorist Injured	0
Persons Killed	0
Pedestrians Killed	0
Cyclist Killed	0
Motorist Killed	0
Contributing Factor	Unspecified
Vehicle 1 Type	SUV
Vehicle 2 Type	SUV

Business Questions:

Some of the business questions that can be answered by this dashboard:

1. From the state government, accidents involving state transport / utility such as Ambulances, Firetrucks, Garbage disposal trucks can be monitored.
    a. How many ambulances and firetrucks have been in an accident?
    b. Has any emergency respondent vehicle accident lead to a casualty?

2. From a private business such as insurance providers or car workshops, what borough has the highest number of accidents or what borough has the highest amount people killed/injured.
    a. Which area/region has the highest number of Sedans/SUV's in an accident?
    b. Which type of vehicle is most involved in an accident?

3. From the state police, what area has the highest DUI involved accidents resulting them in an optimized patrol cars per borough.
    a. Which hour has the highest DUI related accidents?
    b. Which region has more DUI casualties/injuries?

Dashboard Description:

- There are no overall filters on the dashboard

Layout:

The dashboard consists of 3 main areas

- Header Area (Title & Subtitle)
- Slicer & Callout/Cards Area
- Main Chart Area

Slicers:

There are 3 Slicers on the dashboard:

- **Borough** is a dropdown slicer with multi select of the Location column.
- **Year** is a between slicer of the Crashed Date column.
- **Vehicle** is a dropdown slicer with multi select of the Vehicle Type column.

Callouts:

There are 6 Callouts/KPIs on the dashboard:

- **Total Accidents**: The number of accidents calculated by counting the collision ids since they are distinct.
- **Total Fatalities:** The number of people killed calculated by the sum of the persons killed column.
- **People Injured:** The number of people injured calculated by the sum of the persons injured column.

- **Vehicle Involved:** The number of vehicles involved calculated by the sum of the vehicles involved column.
- **Vehicles Inv/Accident:** The average no. of vehicles involved by having average of vehicles involved column.
- **Fatalities (Selected):** The number of people killed in the selected filter.

Main Charts:

The dashboard has 6 main charts:

- **Map of NYC Boroughs:** A map chart showing the Boroughs of New York with the boroughs/locations in Legend (Longitude and Latitude columns were used)
  - ✓ Only interacts with the Borough Slicer.

- **Number of People Killed:** A Step Line chart showing the trend of number of people killed (persons killed column) by year and month(drilldown).

- **Number of People Killed (By Category): A** Stacked Column chart showing the split of number of people (persons killed column) killed by year and month (drilldown) – (Cyclists, Pedestrians, Motorists)

- **Top 5 Contributing Factors**: A Bar chart showing the top 5 reasons for collisions in descending order by the number of collisions (Top N Filtering on no of collisions)

- **Top 5 Vehicle Types:** A Bar chart showing the top 5 vehicles involved in collisions in descending order by the number of collisions ((Top N Filtering on no of collisions)

- **DUI Related Accidents:** A Column chart showing the no. of collisions involving DUI (filter: contributing factor = DUI) by Hour (hour column)