NYC Borough Crash Analysis Project Report

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# Business Case

With increasing vehicular congestion and public safety concerns, analyzing traffic collision data in New York City can uncover patterns in crash occurrences, identify high-risk zones, and support data-driven interventions to reduce accidents, improve infrastructure, and enhance public safety.

# Objectives

- Determine the total number of crashes across NYC boroughs.  
- Identify peak times and locations with the highest crash frequencies.  
- Analyze vehicle types and contributing factors to crashes.  
- Assess crash distribution by ZIP code and time of day.  
- Present meaningful KPIs and visualizations to support strategic decisions.

# Methodology

Data was sourced from the NYC Motor Vehicle Collisions dataset. Using Tableau, we cleaned and prepared the data, including parsing dates, extracting crash hours, and grouping contributing factors. Various visuals such as bar charts, line charts, treemaps, and geographical maps were created. KPIs were also developed to highlight critical statistics.

# Key Findings

- \*\*Total Crashes:\*\* Over 1 million crashes were recorded.  
- \*\*Injuries/Fatalities:\*\* Approximately 27.7% of crashes involved injuries or fatalities.  
- \*\*Peak Hour Crashes:\*\* 43% of all crashes occurred during peak hours (morning and evening).  
- \*\*Top Vehicle Type:\*\* Sedans were involved in the highest number of collisions.  
- \*\*Top Contributing Factor:\*\* Driver distraction/inattention appeared frequently across incidents.  
- \*\*Most Affected Borough:\*\* Brooklyn recorded the highest number of crashes overall.  
- \*\*Geographic Trends:\*\* ZIP code mapping showed specific neighborhoods with consistently high crash counts.

# Insights and Recommendations

- \*\*Infrastructure Improvements:\*\* Targeted enhancements such as traffic signals, signage, and pedestrian zones in high-risk ZIP codes.  
- \*\*Driver Education:\*\* Increase awareness around common contributing factors like distraction and inattention.  
- \*\*Peak Hour Interventions:\*\* Deploy traffic enforcement and congestion-reduction measures during known peak periods.  
- \*\*Further Analysis:\*\* Explore seasonal trends, weather conditions, and time-series forecasting for more predictive modeling.

# Dashboard Overview

The visual below summarizes the key components of the crash analysis:

