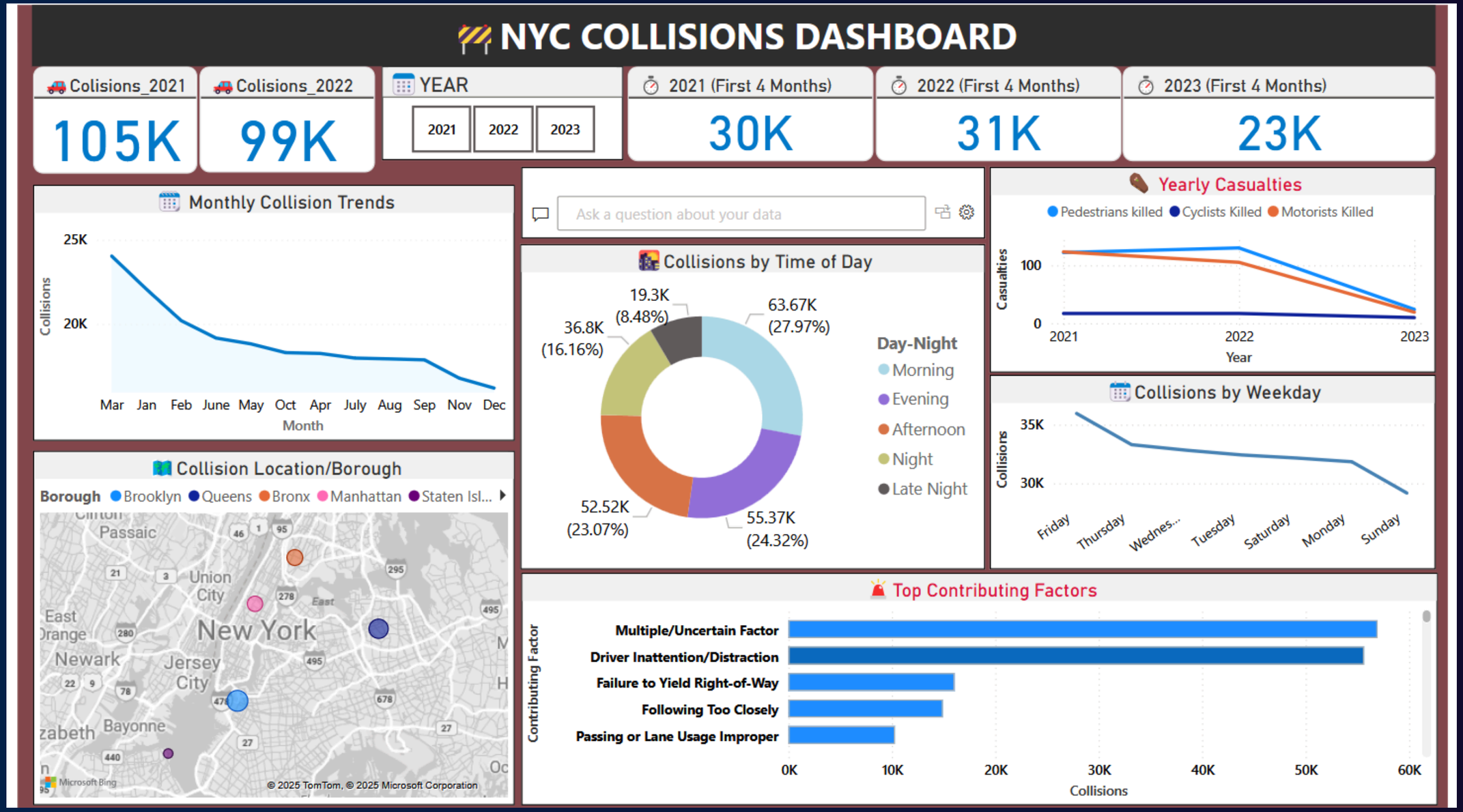
NYC COLLISIONS

Data Analysis

#EDA and Dashboard



Overview:

The dashboard gives a comprehensive snapshot of NYC traffic safety, identifying high-risk periods boroughs with frequent incidents, and leading causes of collisions.

📊 Key Statistics:

2021: 105K collisions

2022: 99K collisions

2023 (First 4 Months): 23K collisions

First 4 Months:

2021: 30K | 2022: 31K | 2023: 23K

Summary:

There's a **consistent decline** in total collisions, especially a ~25% drop in early 2023,

**indicating improved traffic control or less road activity post-COVID.

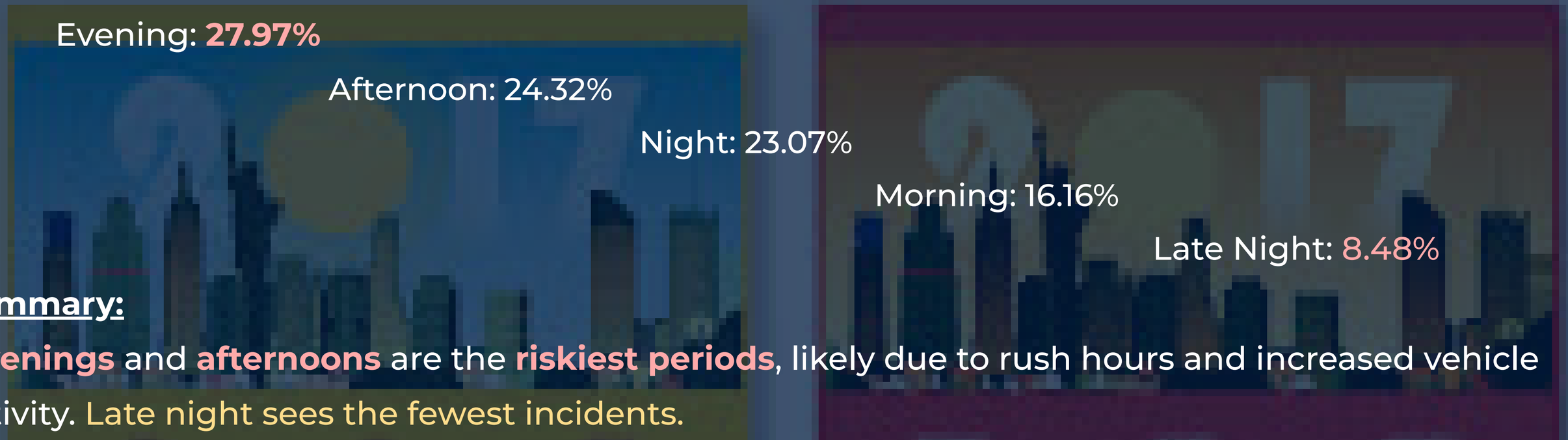
📅 Monthly Collision Trends (2021–2022)

The chart shows a **steady decline** in collisions from January through December, with March seeing the highest and November–December the lowest.

Summary:

Collisions are more frequent in winter/spring months and taper off towards the end of the year, likely due to changing weather and traffic volumes.

🕒 Collisions by Time of Day:



Summary:

Evenings and **afternoons** are the **riskiest periods**, likely due to rush hours and increased vehicle activity. Late night sees the fewest incidents.

📅 Collisions by Weekday:

*Highest on Fridays

Gradual decrease through the week

*Lowest on Sundays

Summary:

End of the workweek (especially Friday) poses **higher collision risks**,

likely due to increased travel and fatigue, while **Sundays remain safest.

☠️ Yearly Casualties (2021–2023):

All categories (pedestrians, cyclists, motorists) show a **downward trend**.

Summary:

Road safety has improved, with declining fatalities, suggesting effective enforcement, safer infrastructure, or decreased traffic volumes.

📍 Collision Locations by Borough:

Brooklyn: *Highest* (Large dark blue bubble)

Queens: Second-highest (Orange bubble),

Manhattan: Moderate (Pink bubble),

Bronx: Moderate (Purple bubble)

Staten Island: *Lowest* (Light blue bubble)

Summary:

Brooklyn and Queens are NYC's **top** hotspots for vehicle collisions.

**Higher population density and traffic congestion may contribute.

Manhattan and Bronx follow,

while Staten Island reports fewer incidents.

Collisions are *not evenly* distributed across **NYC's boroughs**.

This geographic insight helps prioritize resource allocation and safety campaigns for high- risk areas.

⚠ Top Contributing Factors:

Multiple/Uncertain Factors – ~60K

****Driver Inattention/Distraction – ~58K**

Failure to Yield Right-of-Way

etc.. like Following Too Closely, Improper Passing/Lane Usage

Unsafe Speed, Alcohol Involvement

Summary:

Most crashes result from driver behavior, *not external conditions*.

Distraction, right-of-way issues, and tailgating are top concerns.

Secondary causes like speeding, alcohol, and fatigue still play notable roles.

For ***Staten Island***, **Animals interference** on road is also one of the major cause for collisions and road accident casualties.

✅ Conclusive Insights:

- 🚦 **Collisions are decreasing yearly, with a sharp decline in 2023.**
- 🌇 **Evenings and afternoons are high-risk periods.**
- 📍 **Brooklyn and Queens are hotspots for collisions.**
- 🧠 **Most collisions are caused by driver behavior, not external conditions.**
- 📉 **Fridays have the highest incidents, Sundays the lowest.**
- 🛑 **Fatalities are declining, indicating improved road safety.**

Summary:

The city has seen positive trends in safety, but continued efforts are needed to address human factors and borough-specific issues for further reductions.

THANK YOU

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