📘 Uber Request Data Analysis – Optimizing Ride Fulfillment

📄 Objective Summary

This analysis focuses on identifying operational inefficiencies in Uber's ride request data. The goal is to understand **when and why** trip cancellations and "No Cars Available" issues occur, especially across specific pickup points and times of day.

🧹 Data Cleaning Using Excel

- Formatted timestamps to standard datetime format
- Handled missing values in `Drop timestamp` and `Driver ID`
- Created new columns like `Request Hour` and `Day of Week`
- Ensured uniform entries in `Pickup Point` and `Status` fields

📊 Excel Dashboard Insights

- Built Pivot Tables to visualize hourly request trends
- Showed trip status distribution over time
- Compared completion/cancellation rates between City and Airport
- Identified peak hour failures and visual trends in requests

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🧮 SQL Insights

- Queried request data to find peak cancellation periods
- Discovered most unavailability occurs **at night** (Airport pickup)
- Found highest cancellations in **early morning hours** (City pickup)
- Suggested driver deployment strategies using SQL group-by analysis

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🐍 Exploratory Data Analysis Using Pandas

- Parsed timestamps and extracted hour/day features

- Aggregated requests by hour and pickup point
- Used Seaborn and Matplotlib for visual insights
- Verified demand surges from **5–9 AM** and **9–11 PM**, with low driver availability

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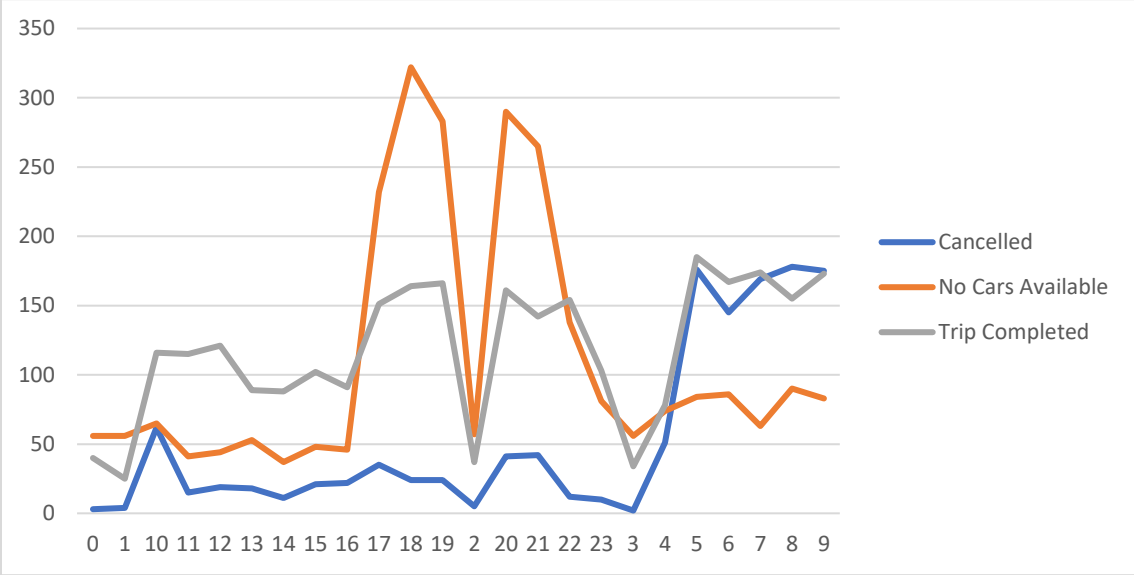
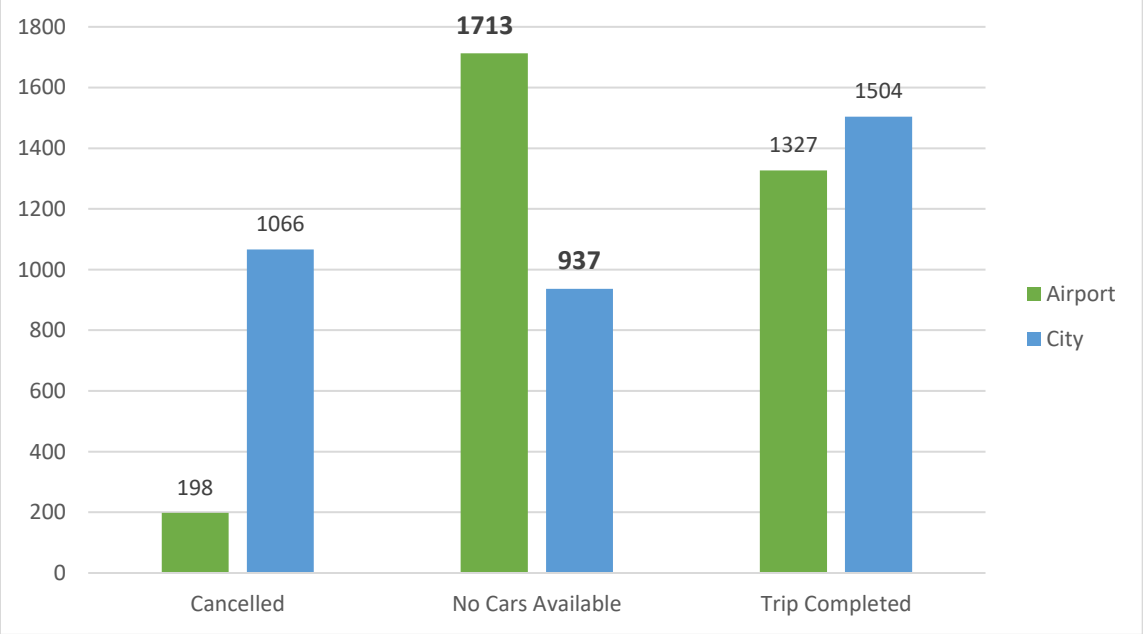
📌 Key Findings (Supported by Figures)

- **Fig 1.1 to 1.3**: Supply-demand gaps from Airport to City at night and early morning



- **Fig 2**: **Pick-up Location Distribution**



💡 Recommendations

- Provide **incentives to drivers** during early morning and morning rush hours
- Launch **Night Shift driver programs** to address night-time unavailability
- Deploy **real-time analytics dashboards** for live demand tracking
- Focus on **airport-specific supply planning** during critical hours

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