Uber Supply-Demand Gap – Insights Report

# Objective

This project analyzes Uber ride request data to identify the supply-demand gap, peak hours, cancellation patterns, and other ride behavior. The goal is to provide data-driven insights to improve Uber’s operations and customer satisfaction.

# Dataset Used

- Rows: ~6,785  
- Columns: 9  
- Key Columns: Request id, Pickup point, Driver id, Status, Request timestamp, Drop timestamp, Trip Duration, Hour, Clean Date

# Tools Used

- Google Sheets – Data cleaning, dashboards  
- MySQL Workbench – SQL queries for analysis  
- Python (Jupyter) – EDA and visualizations using pandas, seaborn, matplotlib

# Key Insights

1. Peak Demand Hours:  
 - Maximum ride requests occur between 5 AM to 9 AM (Morning) and 5 PM to 9 PM (Evening).  
 - These are the critical slots for demand vs availability.  
  
2. Pickup Point Analysis:  
 - Airport: Faces heavy demand in the morning and suffers from driver unavailability.  
 - City: Sees higher demand in the evening with a relatively better fulfillment rate.  
  
3. Status Breakdown:  
 - Major portion of requests are Trip Completed, but a significant percentage are either Cancelled or marked No Cars Available.  
 - These indicate clear supply issues, especially in rush hours.  
  
4. Cancellation Patterns:  
 - Most cancellations happen in early morning hours (5 AM – 7 AM), especially from the Airport pickup point.  
  
5. Supply-Demand Gap:  
 - Gap is prominent in morning hours for Airport pickups and evening for City pickups.  
 - Better driver allocation strategy is needed based on time and location trends.  
  
6. Trip Duration (Completed Trips):  
 - Average trip duration is around 15–20 minutes.  
 - No significant outliers detected, showing consistent trip patterns.

# Recommendations

- Use driver forecasting to allocate more drivers to Airport in the morning.  
- Introduce incentives for drivers to stay active during peak hours.  
- Monitor and reduce cancellation reasons with real-time tracking and better UI prompts for users.

# Conclusion

Through SQL queries, Excel dashboards, and Python EDA, we identified critical patterns and gaps in Uber’s operational data. These insights can help optimize ride completion rate and customer experience.