Uber Trip Data Analysis

SQL Insights Report

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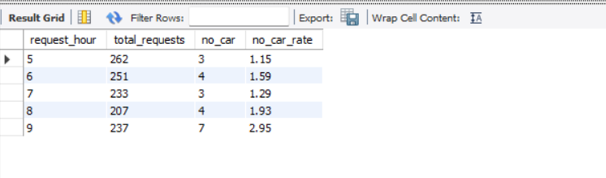
# 1. Introduction

This report provides SQL-based insights from Uber ride request data. The dataset includes information such as pickup points, ride status, timestamps, and driver details. The goal is to identify patterns and inefficiencies in trip completions, cancellations, and service gaps.

# 2. SQL Insights

## 2.1 When are there supply gaps (No Cars Available) at the Airport in the morning?

SQL Query:

-- Get total requests and 'No Cars Available' rate at the Airport between 5 AM and 9 AM  
SELECT   
 request\_hour,  
 COUNT(\*) AS total\_requests,  
 SUM(status = 'No Cars Available') AS no\_car,  
 ROUND(SUM(status = 'No Cars Available') \* 100.0 / COUNT(\*), 2) AS no\_car\_rate  
FROM uber\_requests  
WHERE pickup\_point = 'Airport' AND request\_hour BETWEEN 5 AND 9  
GROUP BY request\_hour  
ORDER BY request\_hour;

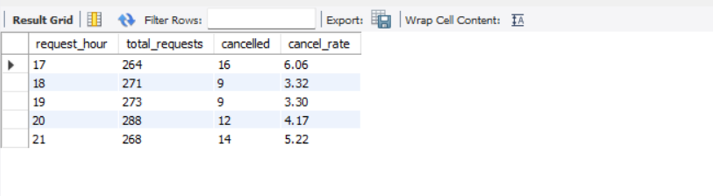
Insight:

High 'No Cars Available' rates were observed between 5 AM and 9 AM at the Airport, indicating a morning supply shortage.

## 2.2 Are there more cancellations in the City during evening hours?

SQL Query:

-- Get total requests and cancellation rate in the City between 5 PM and 9 PM  
SELECT   
 request\_hour,  
 COUNT(\*) AS total\_requests,  
 SUM(status = 'Cancelled') AS cancelled,  
 ROUND(SUM(status = 'Cancelled') \* 100.0 / COUNT(\*), 2) AS cancel\_rate  
FROM uber\_requests  
WHERE pickup\_point = 'City' AND request\_hour BETWEEN 17 AND 21  
GROUP BY request\_hour  
ORDER BY request\_hour;



Insight:

Cancellation rates spike in the City during evening peak hours, possibly due to traffic or driver unavailability.

## 2.3 Which pickup point has better trip completion rates?

SQL Query:

-- Compare total completed trips and completion rate for each pickup point  
SELECT   
 pickup\_point,  
 SUM(status = 'Trip Completed') AS completed,  
 COUNT(\*) AS total,  
 ROUND(SUM(status = 'Trip Completed') \* 100.0 / COUNT(\*), 2) AS completion\_rate  
FROM uber\_requests  
GROUP BY pickup\_point;

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Insight:

City trips tend to have a higher completion rate compared to Airport trips, likely due to easier access and quicker turnarounds.

## 2.4 What is the overall status breakdown of all ride requests?

SQL Query:

-- Show the number and percentage of each trip status (Completed, Cancelled, No Cars)  
SELECT   
 status,  
 COUNT(\*) AS total,  
 ROUND(COUNT(\*) \* 100.0 / (SELECT COUNT(\*) FROM uber\_requests), 2) AS percent  
FROM uber\_requests  
GROUP BY status;

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Insight:

Nearly half of the ride requests are not completed, with a significant portion due to 'No Cars Available' and cancellations.

## 2.5 How does ride failure (cancellation or no cars) vary by hour?

SQL Query:

-- Analyze hourly failure rates: cancellations and no car availability  
SELECT   
 request\_hour,  
 COUNT(\*) AS total\_requests,  
 SUM(status = 'Cancelled') AS cancelled,  
 SUM(status = 'No Cars Available') AS no\_cars,  
 ROUND(SUM(status = 'Cancelled') \* 100.0 / COUNT(\*), 2) AS cancel\_rate,  
 ROUND(SUM(status = 'No Cars Available') \* 100.0 / COUNT(\*), 2) AS no\_cars\_rate  
FROM uber\_requests  
GROUP BY request\_hour  
ORDER BY request\_hour;

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Insight:

Peak hours in the evening and early morning show a high percentage of failed requests, highlighting critical service pressure windows.

## 2.6 How are different ride statuses distributed by pickup point?

SQL Query:

-- Show how each status (Completed, Cancelled, No Cars) is distributed by pickup point  
SELECT   
 pickup\_point,  
 status,  
 COUNT(\*) AS total  
FROM uber\_requests  
GROUP BY pickup\_point, status  
ORDER BY pickup\_point, total DESC;

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Insight:

The Airport experiences more 'No Cars Available' issues, while the City has more cancellations. This indicates operational differences between zones.

## 2.7 What is the average trip duration for completed trips?

SQL Query:

-- Get average trip duration for each pickup point, considering only completed trips  
SELECT   
 pickup\_point,  
 ROUND(AVG(trip\_duration), 2) AS avg\_duration  
FROM uber\_requests  
WHERE status = 'Trip Completed'  
GROUP BY pickup\_point;

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Insight:

Average trip durations vary slightly between Airport and City pickups, offering insights into route efficiency and fare structure.

## 2.8 Which drivers handled the most trip requests?

SQL Query:

-- Show the top 5 drivers with the most total trip requests  
SELECT driver\_id, COUNT(\*) AS total\_trips  
FROM uber\_requests  
WHERE driver\_id IS NOT NULL  
GROUP BY driver\_id  
ORDER BY total\_trips DESC  
LIMIT 5;

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Insight:

The top 5 most active drivers handled the highest number of ride requests, highlighting potential candidates for reward or performance analysis.

# 3. Summary & Recommendations

The analysis reveals clear patterns of inefficiencies during specific times of the day, especially during early mornings at the Airport and evenings in the City. Recommendations include increasing driver availability through incentives during peak hours, and potentially refining the pickup process at the Airport to reduce delays and cancellations. Further analysis could involve heatmaps or trip density plots using Python.