

# UBER SUPPLY-DEMAND ASSIGNMENT

## SUBMISSION

**Name: Dinesh Challa**

Uber wants to address the problem of driver cancellation and non-availability of cars which is leading to loss of potential revenue.

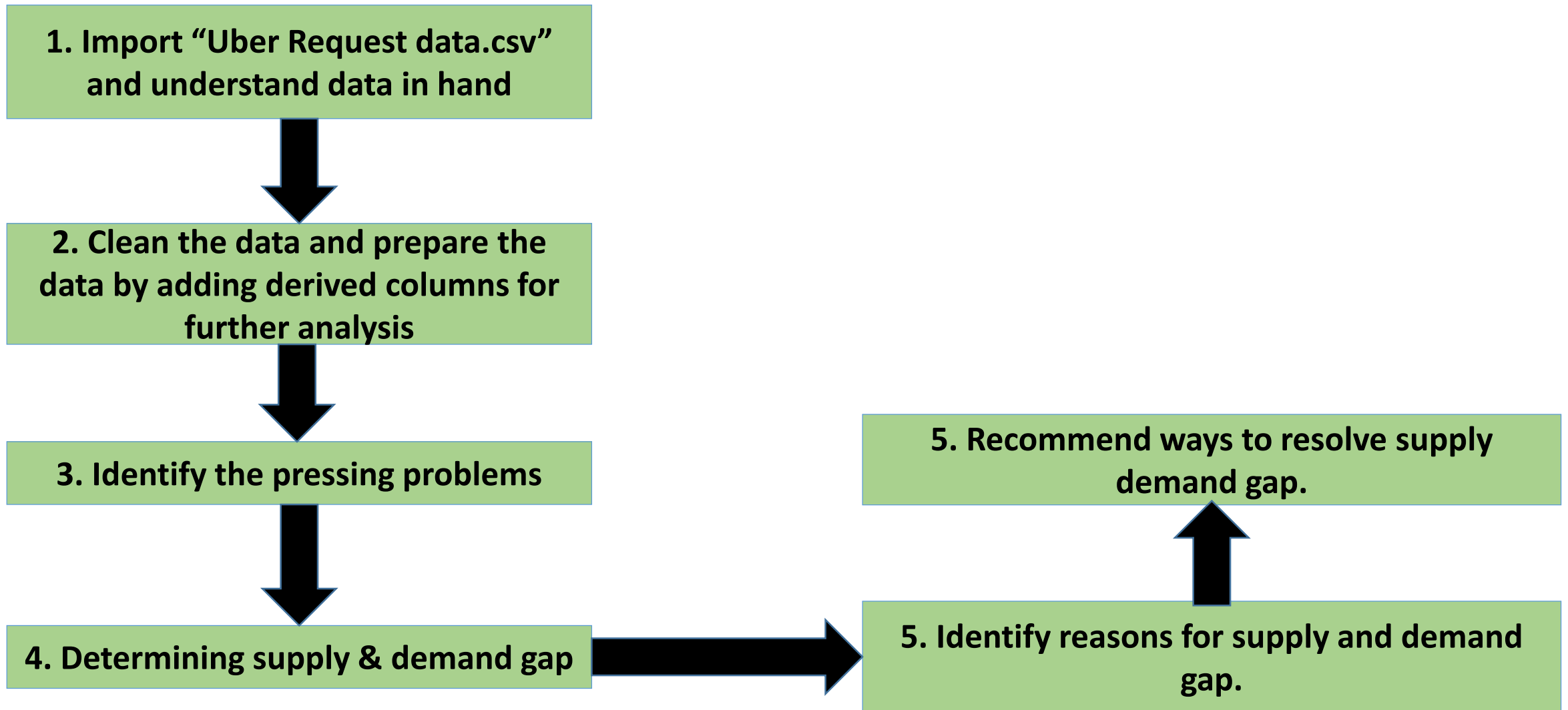
The analysis is concentrated on the following trips

- City to Airport.
- Airport to City.

**Business objective:** The objective is to identify the root cause of the problem (i.e. cancellation and non-availability of cars) and recommend ways to improve the situation.

**Steps involved in data analysis:**

- Identify the most pressing problems for Uber
- Finding the gap between supply and demand
- Reasons for supply-demand gap
- Recommend ways to resolve supply-demand gap

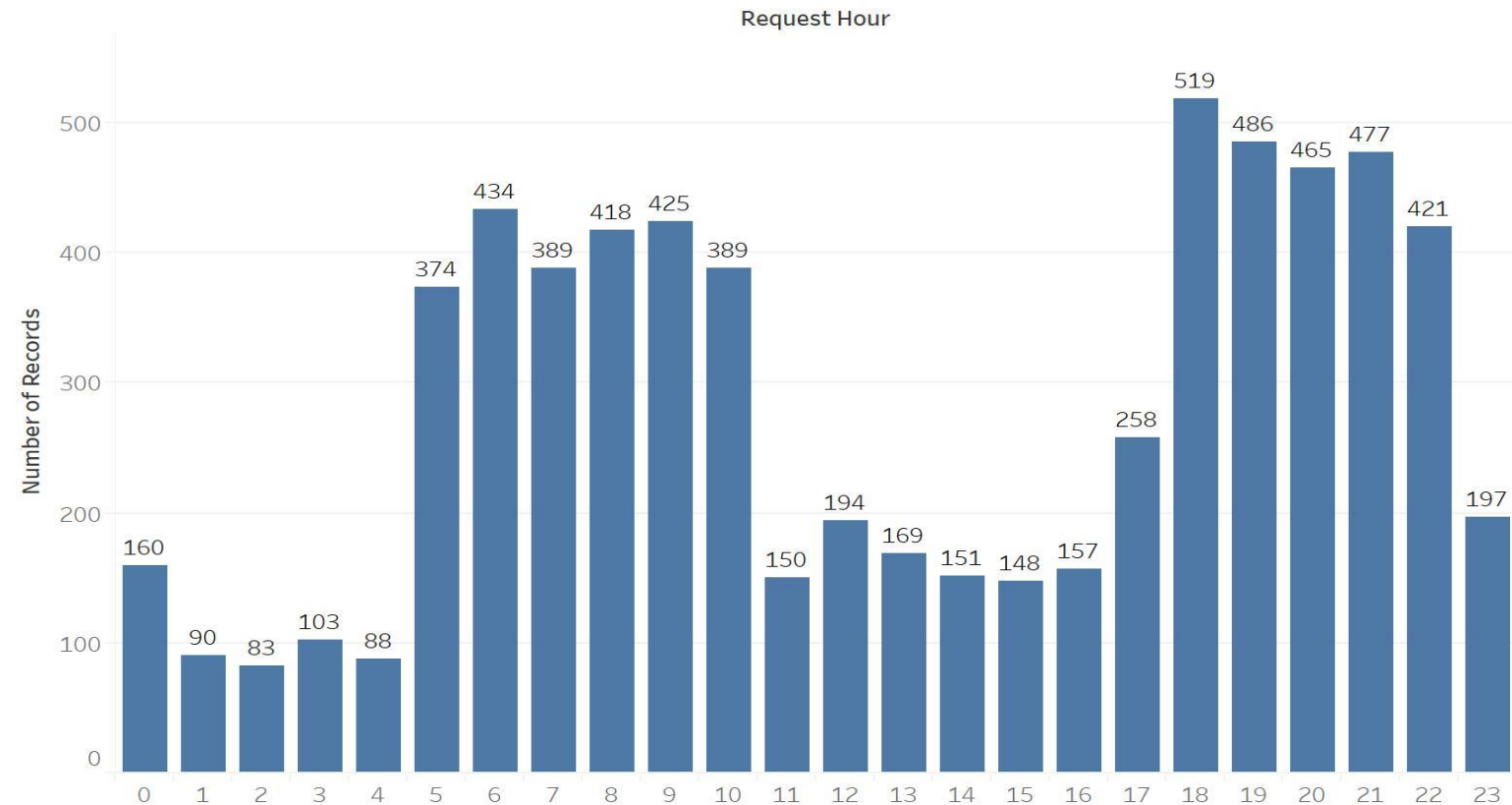


# Identifying the pressing problems

We can see a surge in demand in the time intervals, 5 to 10 and 17 to 22. Let's bin the time into time slots to further understand the problem. The 24 hours in a day is divided into the following slots:

- 1 to 4: Early morning
- 5 to 10: Morning
- 11 to 17: Mid-day
- 18 to 22: Evening
- 23 to 24/0: Late Night

Time vs Number of requests



Sum of Number of Records for each Request Hour. The marks are labeled by sum of Number of Records.

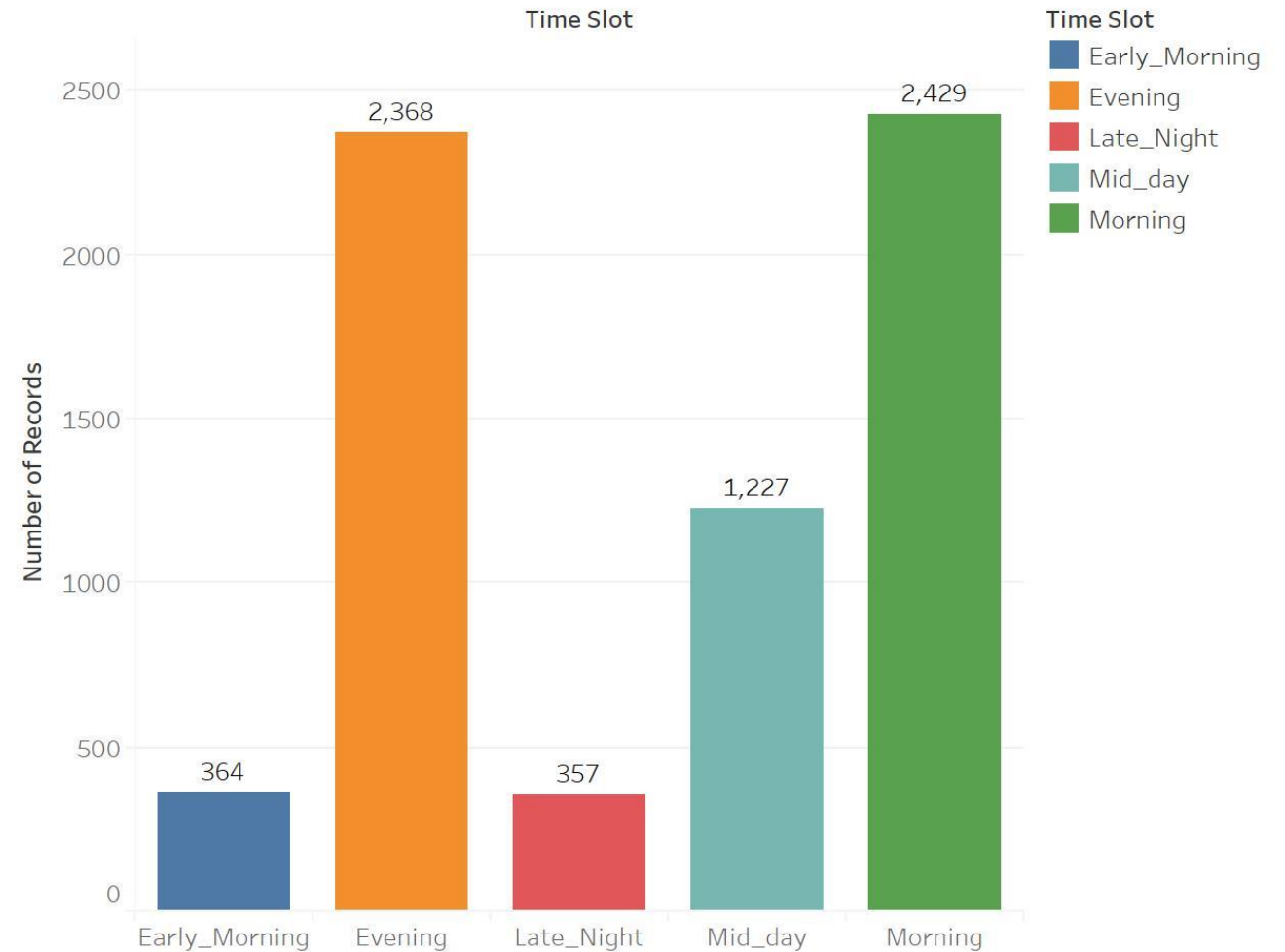
We can see a surge in the number of requests in the following time slots:

☐ Morning

☐ Evening

We can say that these two time slots are having good demand. Let's further break down these time slots to check the gap between supply and demand.

Time Slot vs Frequency



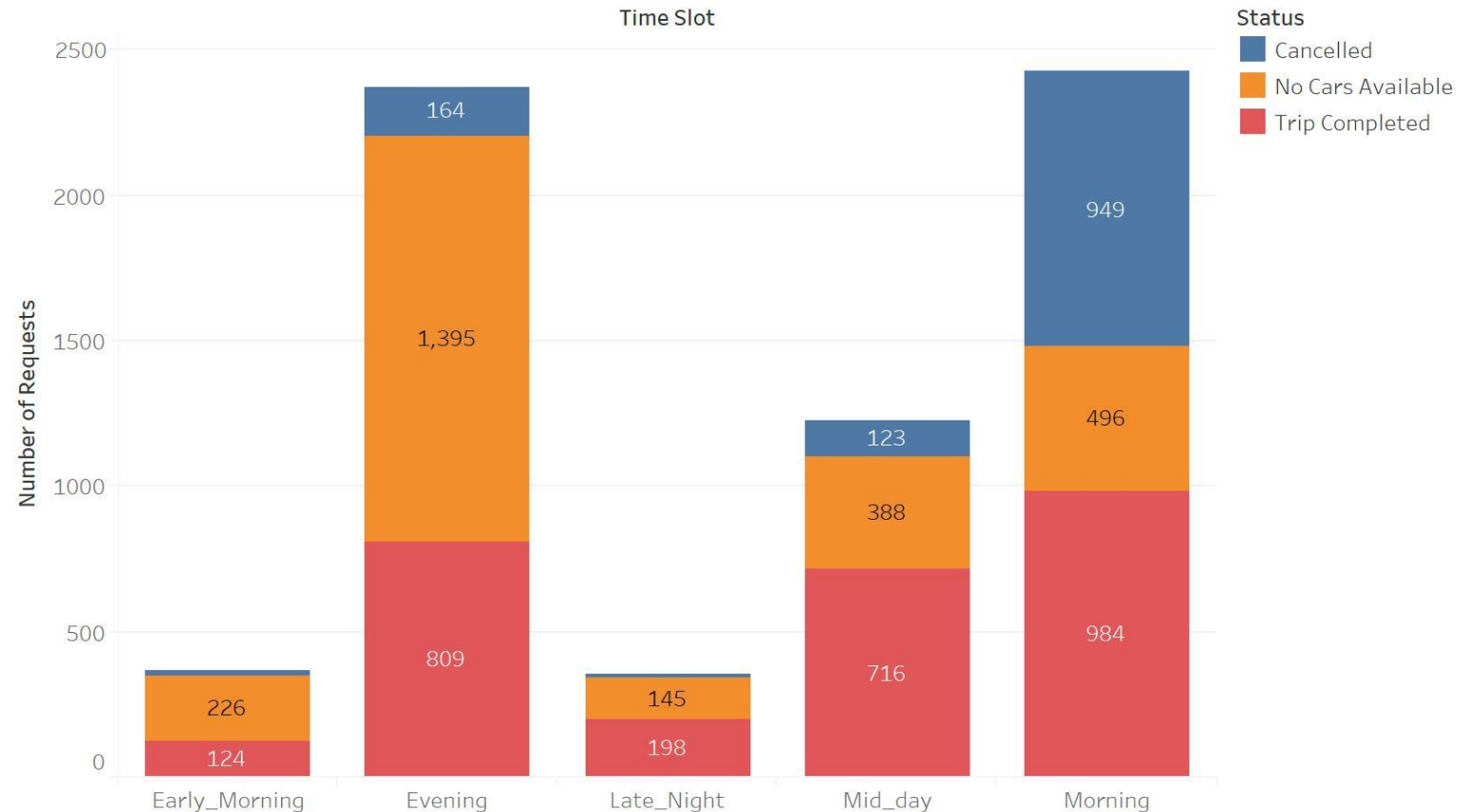
Sum of Number of Records for each Time Slot. Color shows details about Time Slot. The marks are labeled by sum of Number of Records.

We observe the following:

- Morning time slot has more requests which are getting cancelled.
- Evening time slot has more requests which are unanswered because of no cars available.

We can say that these two time slots have the highest supply-demand gap. Let's further narrow down our analysis to see which type of requests (city to airport / airport to city) has the highest gap.

Overall: Supply-Demand Gap

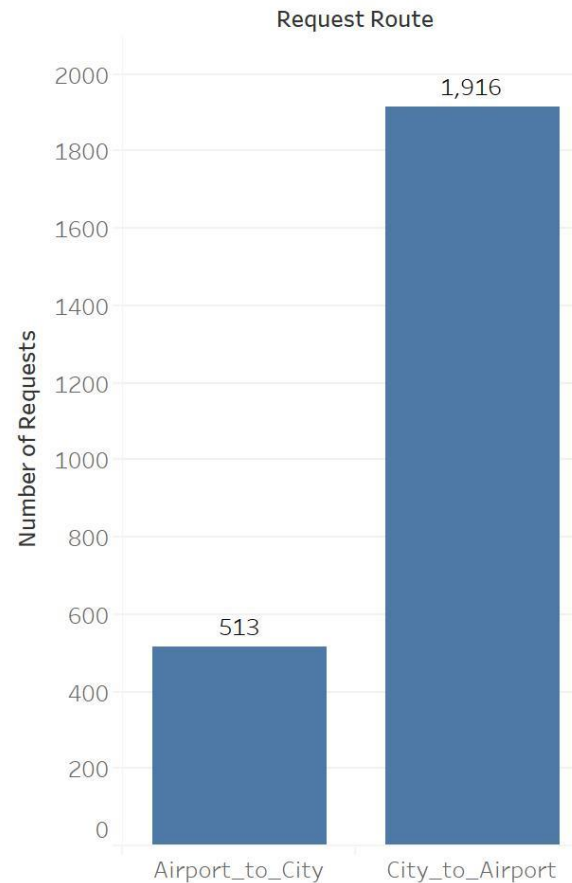


Sum of Number of Records for each Time Slot. Color shows details about Status. The marks are labeled by sum of Number of Records.

## Morning Time-Slot:

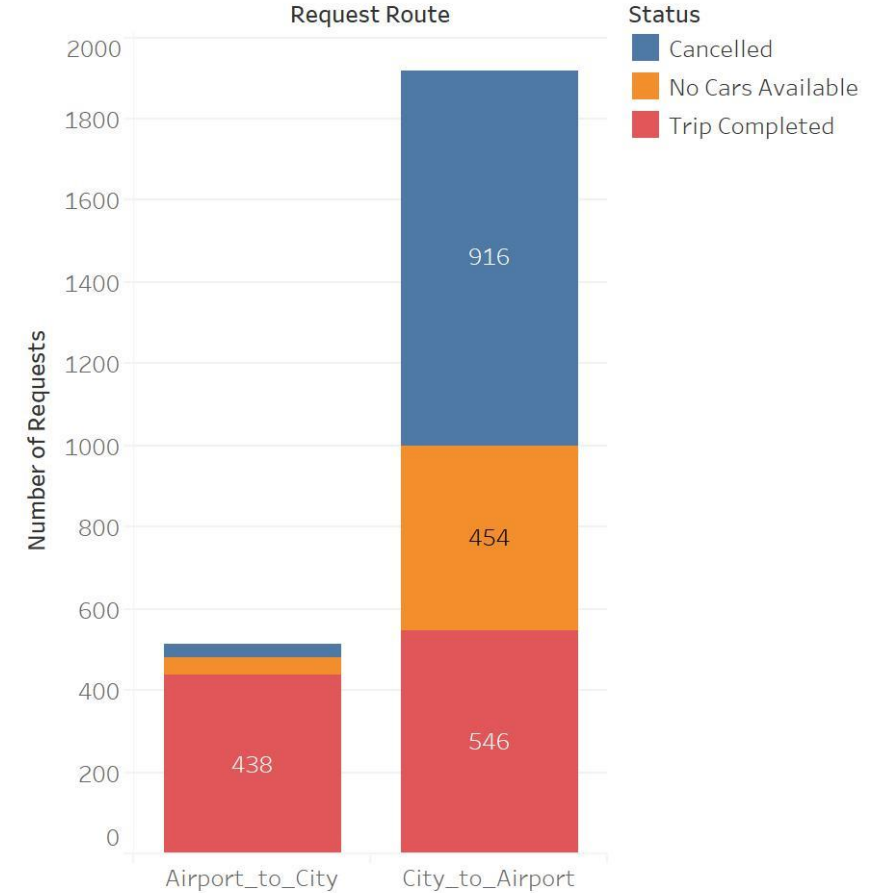
- Number of requests from City to Airport: 1916 (Demand)
- Number of request from City to Airport which are completed: 546 (Supply)
- $\text{Gap} = \text{Demand} - \text{Supply} = 1370$

## Morning Time slot: Supply-Demand Gap



Sum of Number of Records for each Request Route.  
The marks are labeled by sum of Number of Records.  
The data is filtered on Time Slot, which keeps Morning.

## Morning Time slot: Supply-Demand Gap

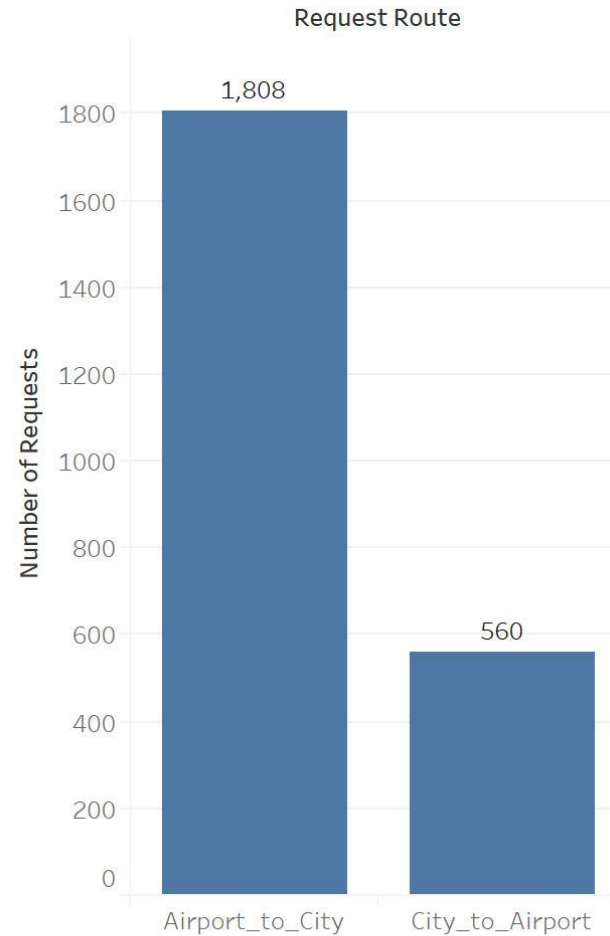


Sum of Number of Records for each Request Route.  
Color shows details about Status. The marks are labeled by sum of Number of Records. The data is filtered on Time Slot, which keeps Morning.

## Evening Time-Slot:

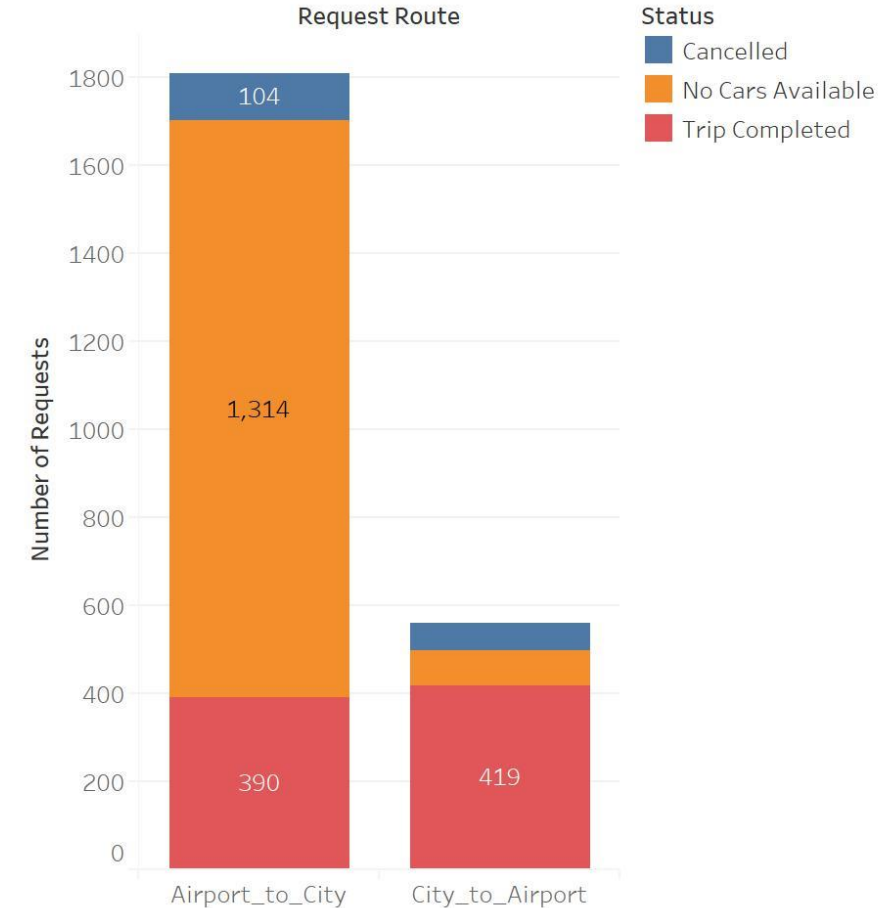
- Number of requests from Airport to City: 1808 (Demand)
- Number of request from Airport to City which are completed: 390 (Supply)
- Gap = Demand – Supply = 1418

## Evening Time slot: Supply-Demand Gap



Sum of Number of Records for each Request Route.  
The marks are labeled by sum of Number of Records.  
The data is filtered on Time Slot, which keeps Evening.

## Evening Time slot: Supply-Demand Gap



Sum of Number of Records for each Request Route.  
Color shows details about Status. The marks are labeled by sum of Number of Records. The data is filtered on Time Slot, which keeps Evening.





# Reasons and Recommendations for Supply-Demand Gap



## **Morning Time-slot (City to Airport):**

**Reason:** Drivers might be cancelling trips because of the less number of requests from “Airport to City” on return which would result in more waiting time for the next trip.

**Recommendation:** I would recommend Uber to increase the fare price on all trips from “City to Airport” in the morning slot. This would encourage more drivers to accept the requests.

## **Evening Time-slot (Airport to City):**

**Reason:** There might not be enough cars to cater the huge demand in this time slot.

**Recommendation:** I would recommend Uber to increase the number of cars from airport in the evening time slot to leverage this huge demand.