



UBER SUPPLY-DEMAND GAP ASSIGNMENT

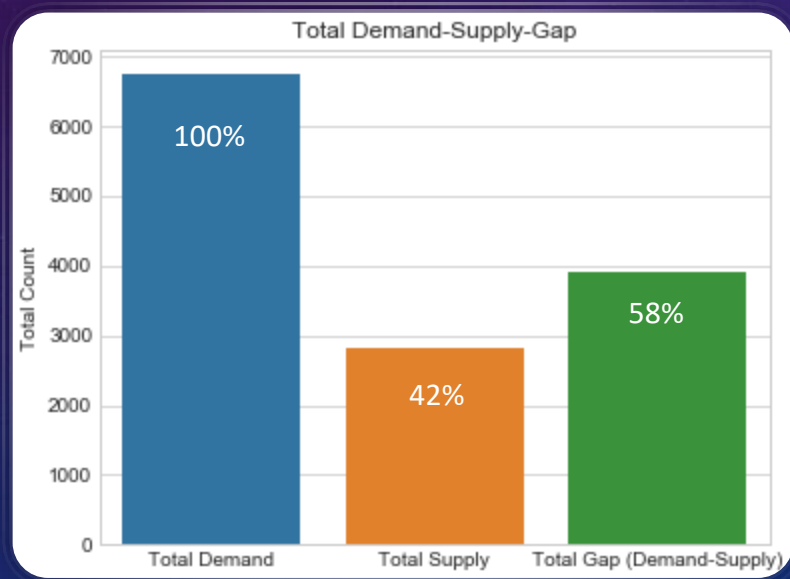
UBER

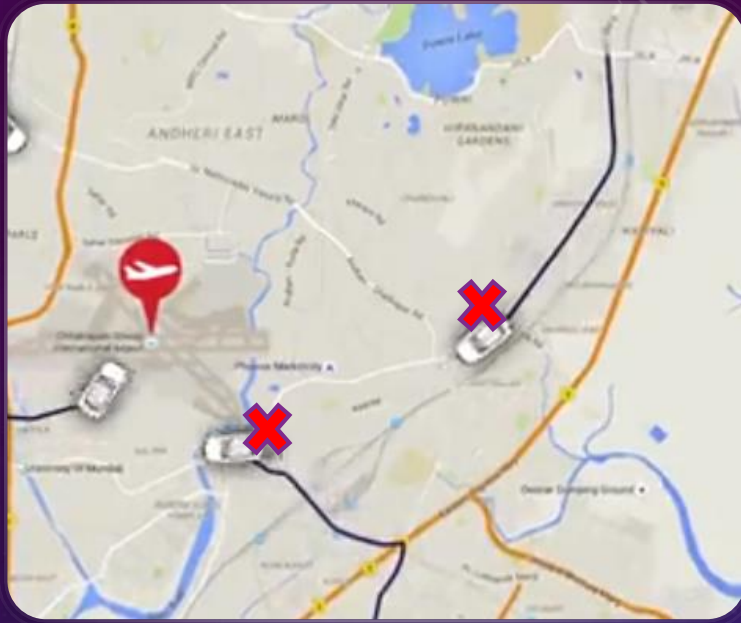
- HEMANT BADGUJAR



TARGET

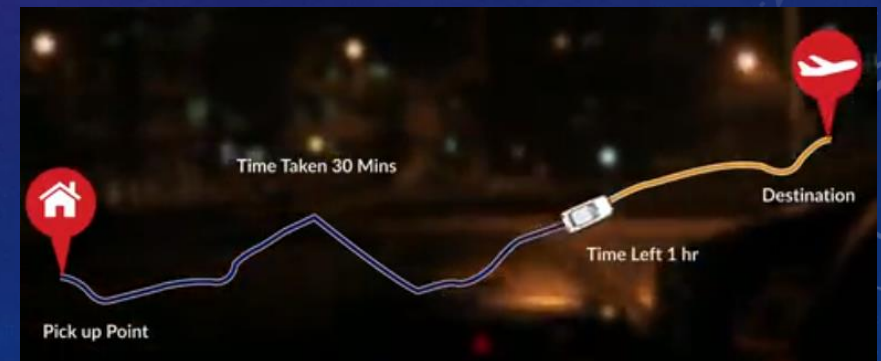
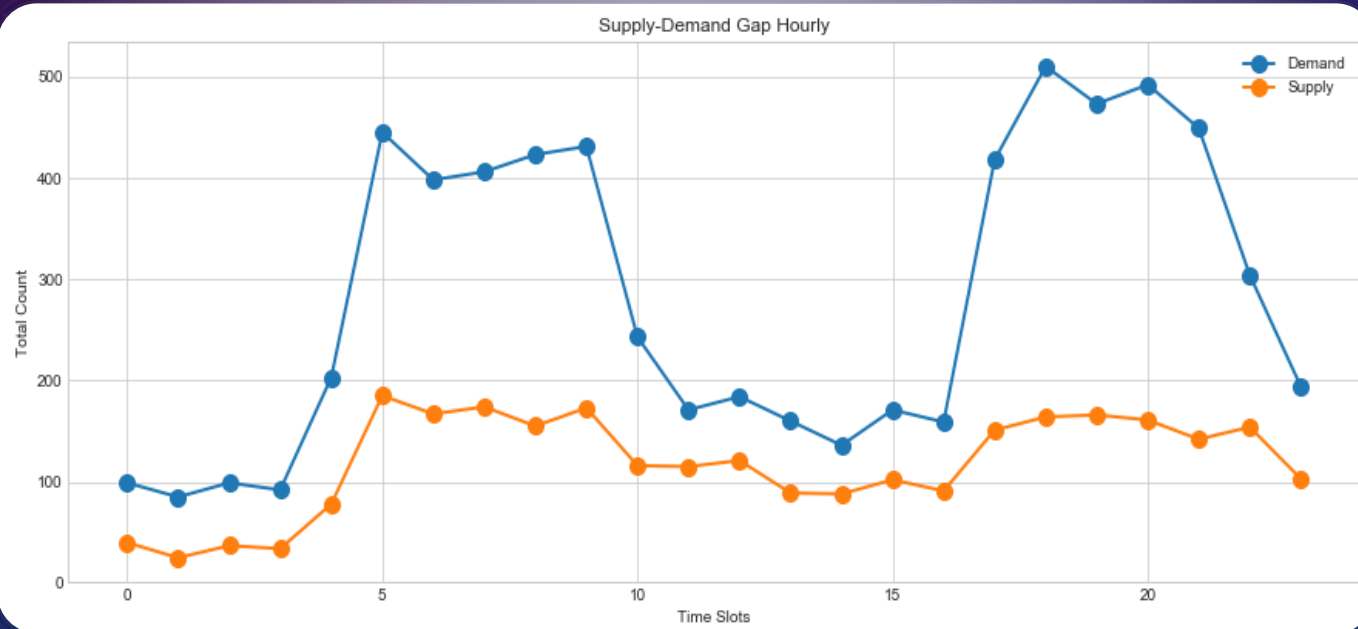
- ❖ Data Engineering & Visualization to analyze the Uber data
 - ❖ Study the gap between Demand & Supply
 - ❖ Build an Hypothesis to find the contributors behind the gap in supply
 - ❖ Prove the hypothesis through data
 - ❖ Suggest a course of action to meet the demand
- ❖ Bridge the Supply-Demand Gap



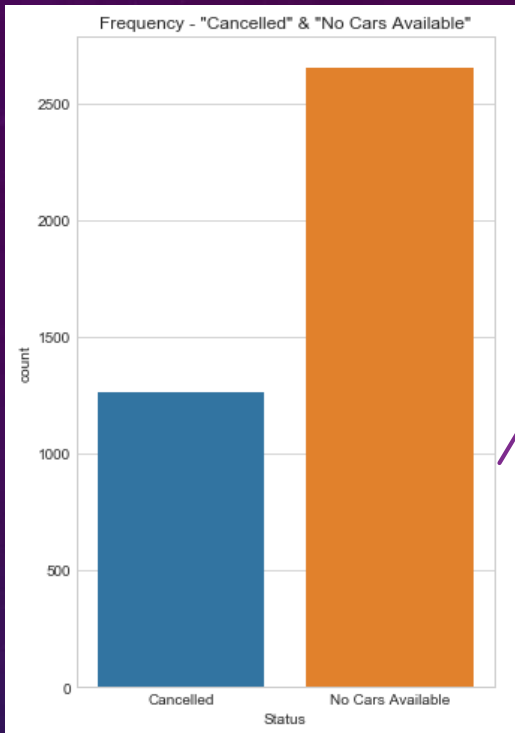


PROBLEM DEFINITION

- ❖ Severe Gap in the Demand and Supply of cars
- ❖ Unavailability of cars for request types “Airport to City” or “City to Airport”
- ❖ Most of the drivers cancelling the requests



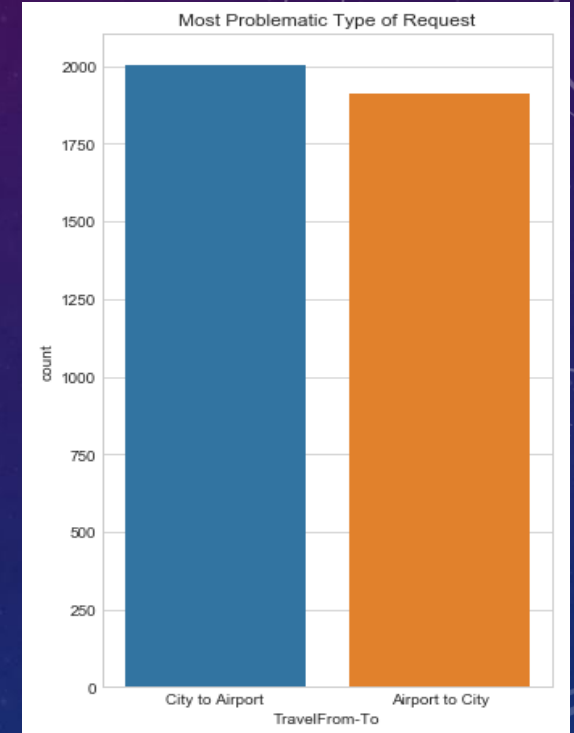
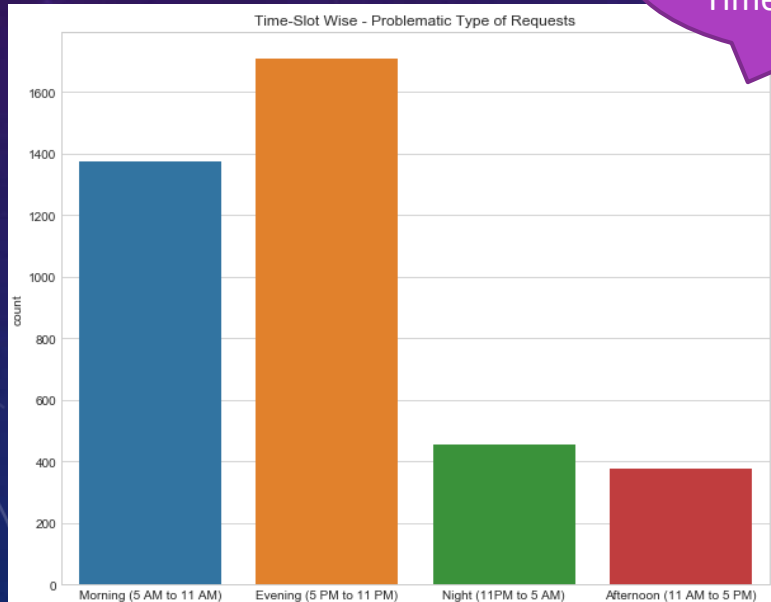
KEY METRICS



Number of requests
"Cancelled by Drivers"
OR "Cancelled due to
Unavailability of Cars"

- ❖ Request types for which Supply-Demand gap is most severe in the identified problematic time slots

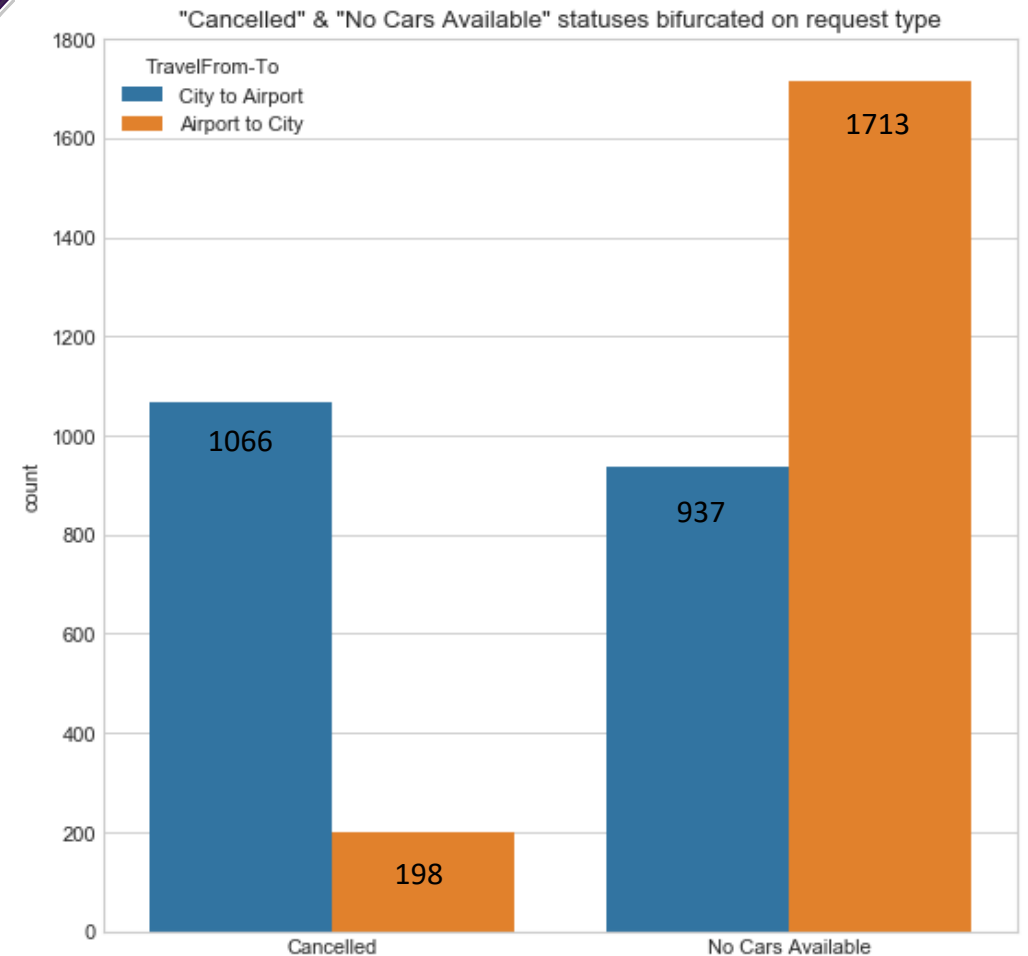
Count of
requests on each
Time-Slot



Most problematic
request types - "Airport
to City" OR "City to
Airport"

ANALYSIS – KEY OBSERVATIONS - I

- ❖ High number of requests from “Airport to City” is incomplete because of “Unavailability of Cars”
- ❖ High number of requests from “City to Airport” are cancelled by drivers



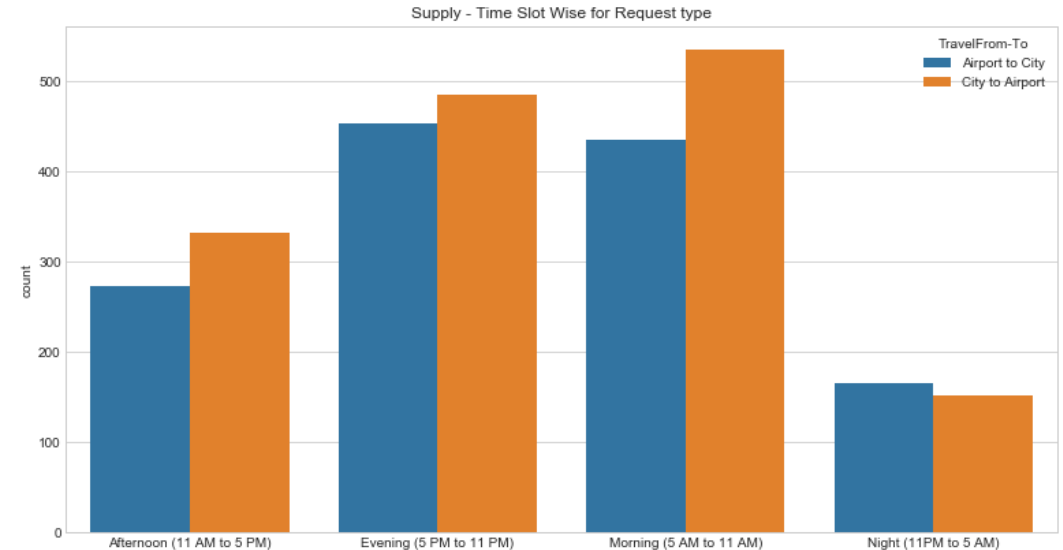
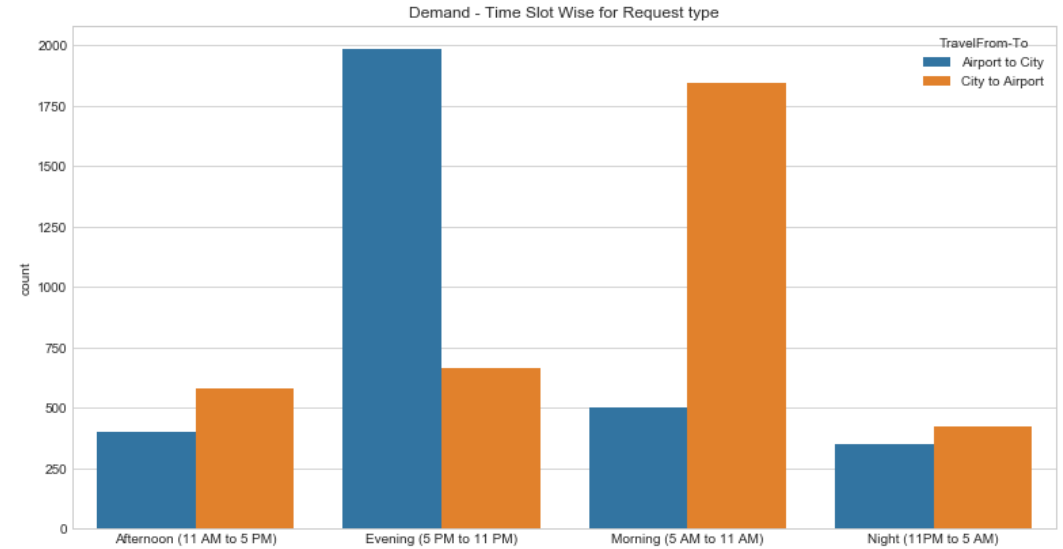
ANALYSIS – KEY OBSERVATIONS - II

❖ “Airport to City”

- High demand for cars from 5PM to 11PM
- Supply was limited in the same time slot
- High number of requests in Evening slots

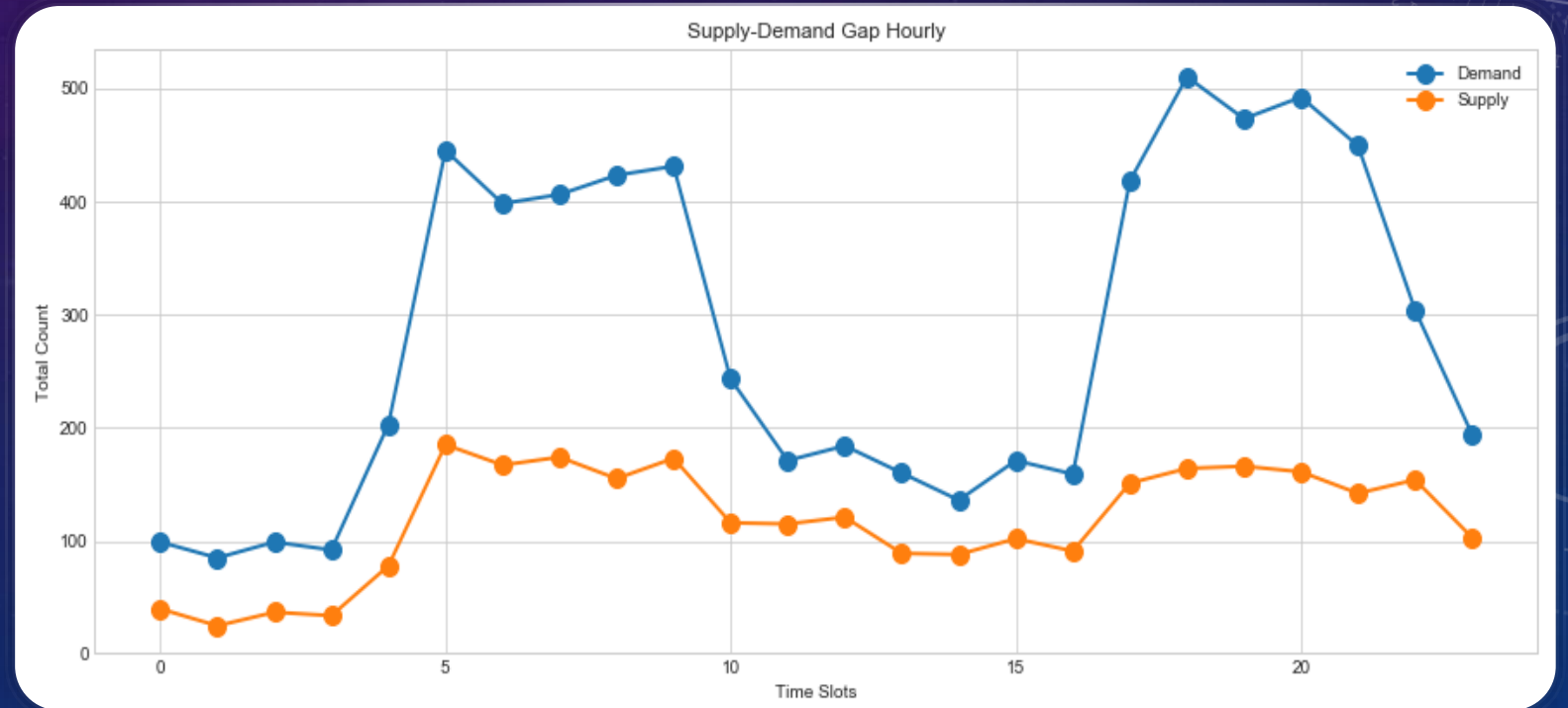
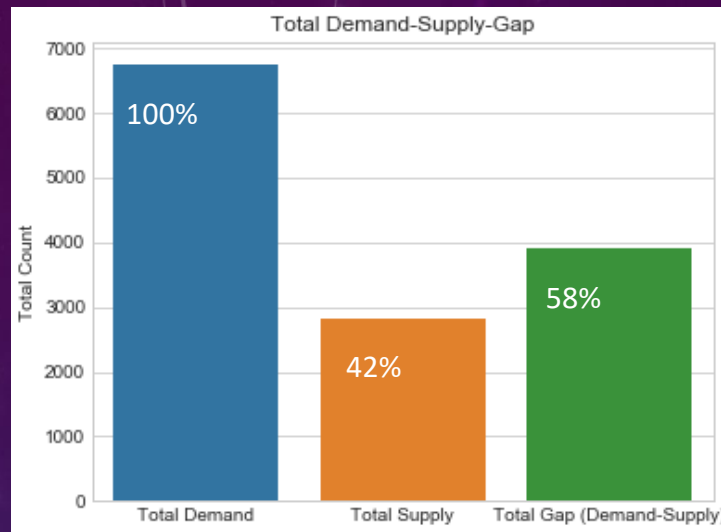
❖ “City to Airport”

- High demand for cars from 5AM to 11AM
- Supply was limited in the same time slot
- High number of requests in Morning slots



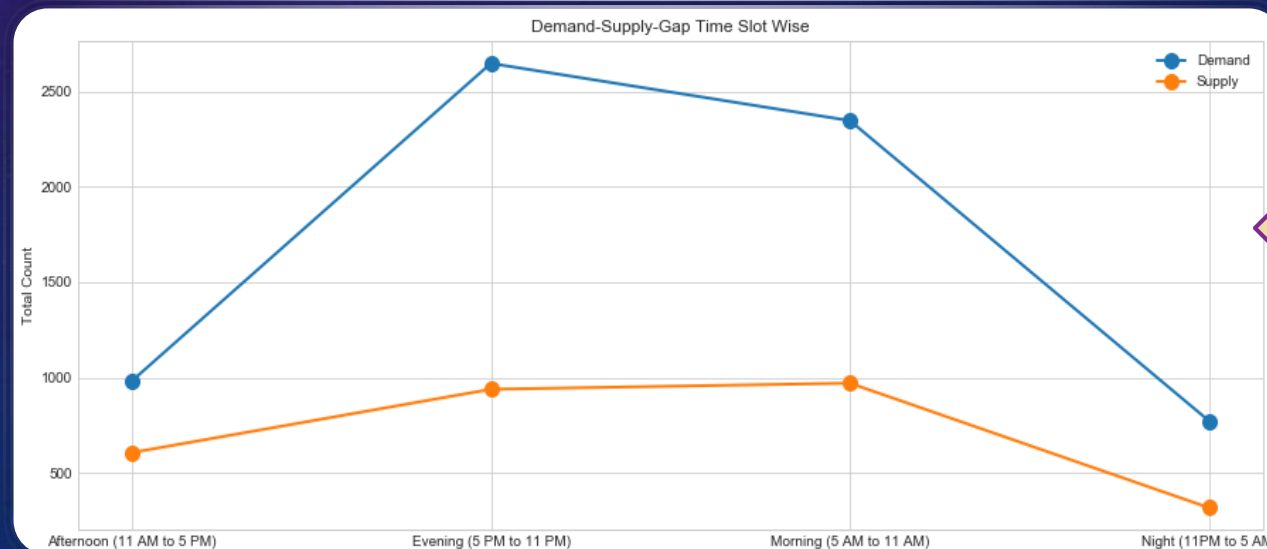
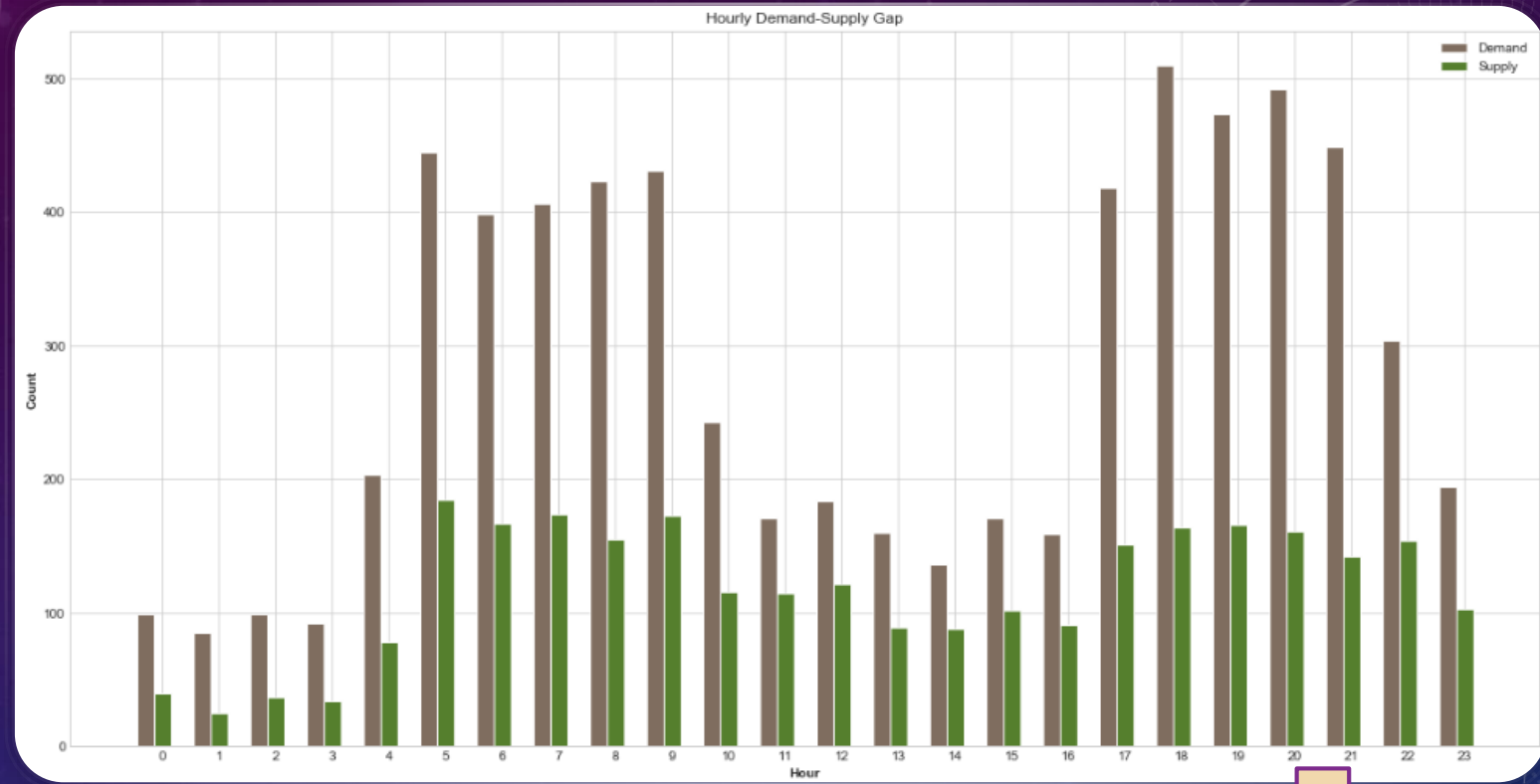
ANALYSIS – KEY OBSERVATIONS - III

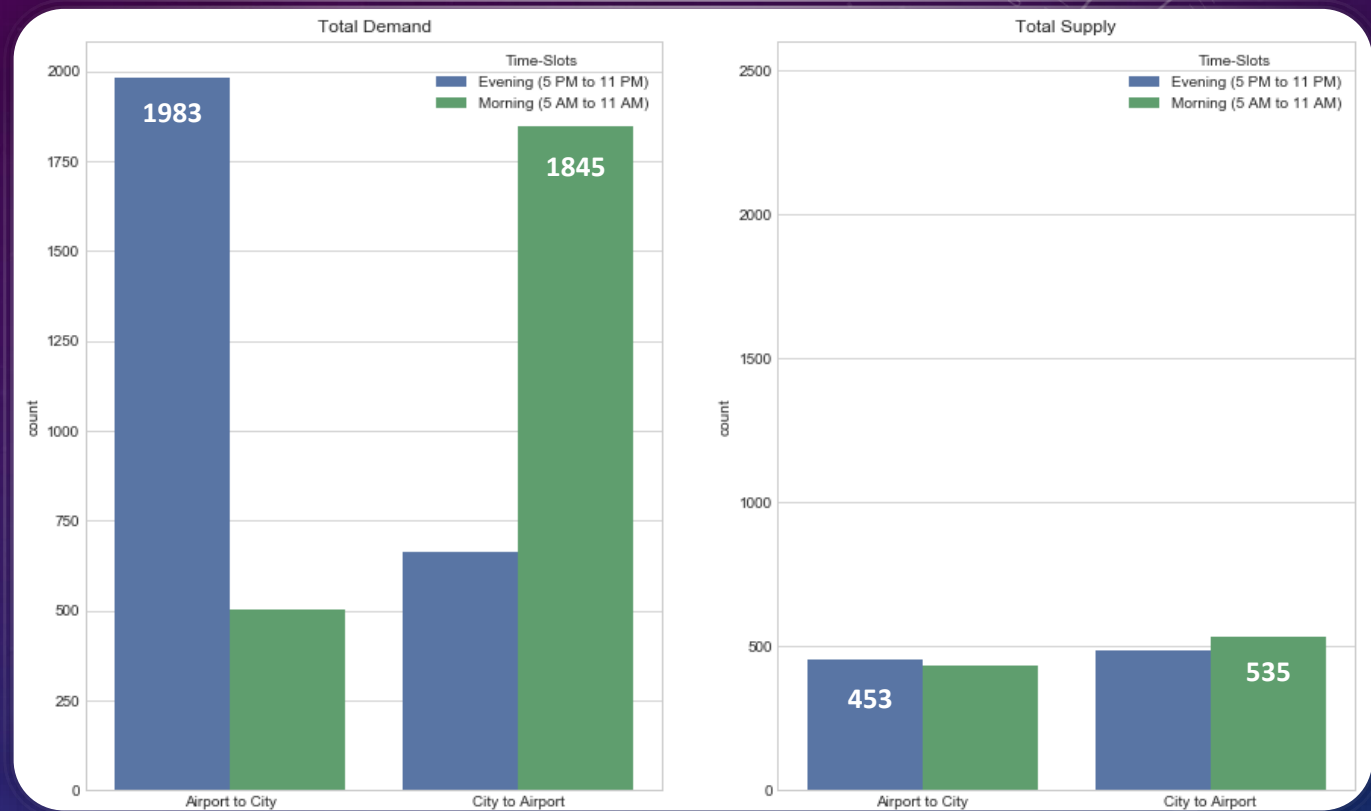
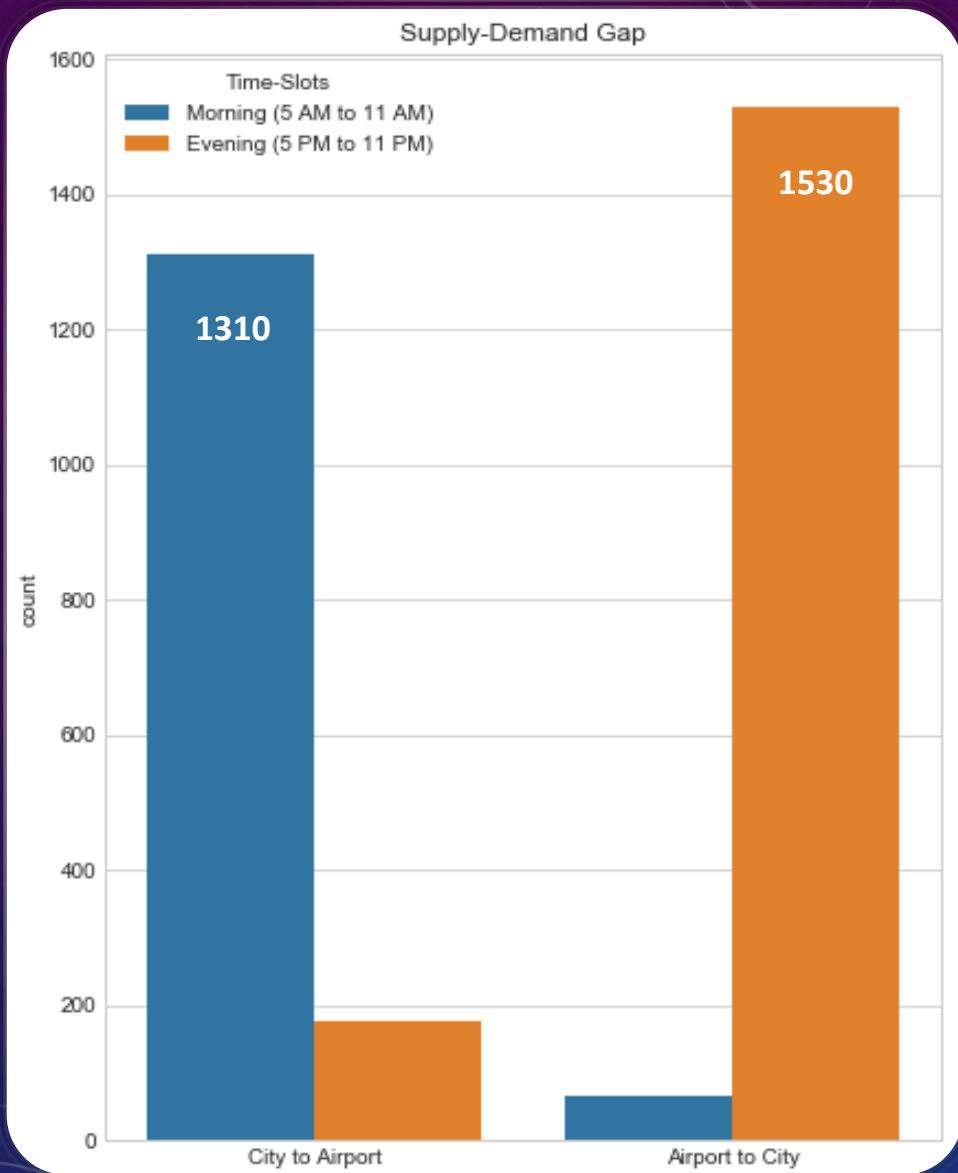
- ❖ Overall Supply of cars is much less when compared to the overall demand
- ❖ 58% of requests are either cancelled by drivers or incomplete because of unavailability of cars
- ❖ Highest gap in Supply-Demand on hour scale seen through line chart in Morning (5th-10th hour) and Evening (17th-22nd hour)



ANALYSIS – KEY OBSERVATIONS - IV

- ❖ Supply-Demand graph on hours scale helps in identifying the highest gap in (5th-10th hour) and (17th-22nd hour)
- ❖ Hence, the Time-Slots identified for further analysis are:
 - ❖ 5AM to 11AM - Morning
 - ❖ 11AM to 5PM - Afternoon
 - ❖ 5PM to 11PM - Evening
 - ❖ 11PM to 5AM - Night





ANALYSIS – KEY OBSERVATIONS - V

- ❖ For the Morning timeslot, 'City to Airport' appears to be the most problematic request type.
- ❖ For the Evening timeslot, 'Airport to City' appears to be the most problematic request type.

ANALYSIS – KEY OBSERVATIONS - VI

“Idle Time” for a driver is higher in the Morning slot followed by Night slot then the Afternoon and lastly Evening & seems independent of the type of request (“Airport to City” OR “City to Airport”)



BUSINESS PROBLEM

- Most of the Drivers “Cancelling” the rides
- Mostly the requests are incomplete because of “Unavailability of Cars”
- Severe gap in the Demand and the Supply of the requests

ROOT CAUSE & POSSIBLE HYPOTHESIS OF THE PROBLEM

Sr. No.	Observations	Hypothesis
1	<ul style="list-style-type: none">➤ 1713 requests are incomplete at Airport because of unavailability of cars➤ 1066 requests at City are cancelled by drivers	Drivers are hesitating to travel to Airport from City and hence, mostly cars are unavailable at Airport
2	<ul style="list-style-type: none">➤ High demand for cars from Airport to City in Evening slot whereas the supply was very less➤ High demand for cars from City to Airport in Morning slot whereas the supply was very less	Evening and Morning slots are mostly avoided by drivers for travel type ‘Airport to City’ & ‘City to Airport’
3	<ul style="list-style-type: none">➤ Overall supply being 42% of cars causing 58% of gap in total demand of requests	Need to decrease the cancellations & make more cars available to bridge the gap in supply-demand
4	<ul style="list-style-type: none">➤ Evening 5PM-11PM and Morning 5AM-11AM being the highest contributor behind supply-demand gap	Need to target Evening and Morning slots for makings cars available
5	<ul style="list-style-type: none">➤ For the Morning timeslot, ‘City to Airport’ appears to be the most problematic request type.➤ For the Evening timeslot, ‘Airport to City’ appears to be the most problematic request type.	Decrease cancellation and make more cars available mostly at City during Morning slots and at Airport during Evening slots
6	<ul style="list-style-type: none">➤ “Idle Time” for a driver is higher in the Morning slot followed by Night slot then the Afternoon and lastly Evening	Idle time at Airport cannot be compensated whereas Idle time at City will be compensated by shifting to within City requests

Increase

Increase Cars

- Increase the number of cars at Airport during the evening time mostly between 5PM to 11 PM

Provide

Provide System

- Provide a system/mechanism for the drivers to know the flights & their timings landing at Airport so that they can manage the requests

Provide

Provide Allowance

- Provide additional allowance for drivers completing the request in the peak hour like 5PM to 11PM and 5AM to 11AM

Adjust

Adjust Fare Price

- Adjust the fare price charged (may be in the different time slots) from the customers in a way to help in improving the request acceptance rate

WAYS TO IMPROVE

Thank You

